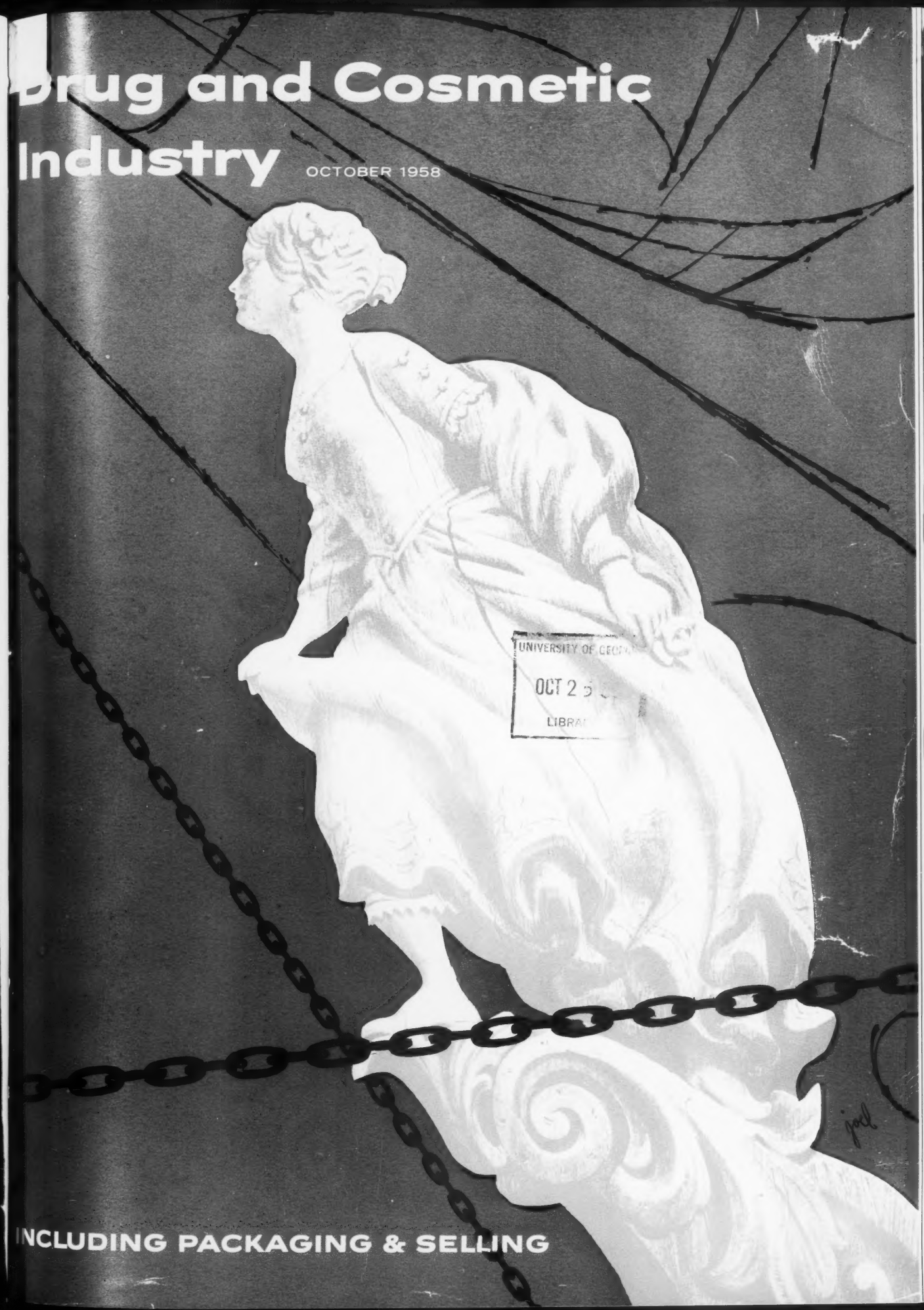
Drug and Cosmetic Industry

OCTOBER 1958



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Drug and Cosmetic Industry

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INSIDE SCIENCE

The Vital Story

A Puzzling Medical Case. A sick, fretful baby lay on his back in a hospital crib recently, his legs extended and his knees slightly bent. He cried and tried to draw away from the examining physician. The doctor studied the case carefully, noting the symptoms and investigating the history of the little patient. Then he made his diagnosis. The baby had *scurvy*.

An Ancient Disease. To us scurvy is a remote disease. We know that years ago it attacked sailors and explorers living on monotonous diets of salt meat and hardtack. But it's hard to believe that scurvy occurs even today in the United States. To be sure, there are few cases, but there should be none! Scurvy is a disease resulting from a deficiency in the diet; it is simply the lack of enough vitamin C.

Scurvy was a disease of the Crusades. It traveled with Vasco de Gama around the Cape of Good Hope, killing two-thirds of his crew. It struck down a quarter of Cartier's men wintering in Canada in 1535. It occurred in famines and pestilences.

Vitamin C Isolated. Long before vitamin C was known, man found certain fruits and vegetables helpful in preventing and treating scurvy. These had been a remedy for scurvy for about 300 years when, in the first quarter of the Twentieth Century, researchers began to examine foods to discover the factor which made them antiscorbutic.

Between 1918 and 1925, Zilva concentrated this antiscorbutic substance from lemons and Agopian isolated it in cabbage.

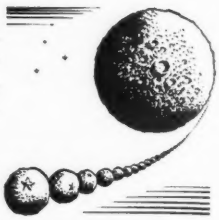
Zilva's work established the important properties of the vitamin, its molecular construction, and its activity as a "reducing factor" — its ability to absorb oxygen. In 1928 Szent-Györgyi, after eight years of investigation, isolated a strong reducing compound from adrenal glands, oranges and cabbage, which he called "hexuronic acid."

In 1931 C. G. King established the chemical structure of vitamin C, thus opening the way to new and important findings. The following year various investigators identified the "reducing factor," "hexuronic acid" and vitamin C as the same compound.

Nature's Vitamin Duplicated. Soon after the vitamin had been isolated and its chemical structure understood, it was synthesized by Reichstein and his fellow workers in Switzerland. Almost simultaneously in Great Britain, Haworth and his associates achieved the same results. The year was 1933.

The synthesis of vitamin C led to pilot plant and then to commercial production, making it available at lower costs than if it had been extracted from natural sources. In fact, the Reichstein synthesis is the basis for weekly production *by the tons* by the firm of Hoffmann-La Roche, the world's largest producer of vitamin C. This commercial production of vitamin C has had incalculable value to the health of people all over the world.

To The Moon And Back. In the United States today, the average *weekly* production of man-made vitamin C now approaches 40 tons — the amount contained in approximately three-quarters of a billion average oranges.



A graphic way to illustrate the huge annual production is to show the equivalent in oranges. Laid side by side, these oranges would reach over two million miles, or more than four round trips to the moon. The *weekly* production alone, expressed as oranges, would circle the world at the equator over one and one-half times.

Synthesis on such a gigantic scale has led to economical costs. Because of this and its proven value to health, vitamin C has an increasingly widespread use in food and pharmaceutical products. There is no substitute for Vitamin C!

A Little Goes A Long Way. One kilogram (2.2 pounds) of pure vitamin C will supply 13,333 people for one day with the amount recommended (75 milligrams) for daily intake by the National Research Council. Or it will supply 92 people for one year with the adult Minimum Daily Requirement (30 milligrams) set by the U. S. Food and Drug Administration.

Names. The designation, vitamin C, is used interchangeably with ascorbic acid. "Ascorbic" is a relatively new word in our language. It was devised by Szent-Györgyi and Haworth in 1933 from a**n**t**i**s**c**o**r**b**u**t**i**c.

Among chemists and nutritionists, vitamin C is known as *l*-ascorbic acid. The formula is $C_6H_8O_6$, which means that it is composed of carbon, hydrogen, and oxygen.

Physical Characteristics. *l*-Ascorbic acid is a white crystalline compound with a slightly acidic taste. It is readily soluble in water, alcohol, glycerin and propylene glycol, and insoluble in oils, fats, ether, benzene or chloroform.

Since it is able to "attach" itself to oxygen it is one of our most important antioxidants for certain foods that have a tendency to discolor and lose their natural flavor.

The designation "U. S. P." used with *l*-ascorbic acid indicates that the product conforms to the stringent specifications of the United States Pharmacopeia. These initials stand for top quality.

Vitamin C made by the Roche process is chemically and biologically identical with nature's own product.

How Vitamin C Helps Our Health. Vitamin C is a vital substance; we cannot live without it. Not only does it prevent or cure scurvy, but it is essential for maintaining healthy bone tissue, and for forming collagen, an important protein found in our skin, tendons, bones, cartilage and connective tissue. Vitamin C is needed for the healthy functioning of the vessels

Expanded Version

# of VITAMIN C *by* Science Writer

(*l*-Ascorbic Acid)

through which our body fluids flow. It also promotes healing of wounds and fractures. It is believed to be essential for tissue respiration, the continual action of the cells as they burn food materials to provide heat and energy for the body.

Our Daily Requirements. Even though ascorbic acid is found in all body tissues and fluids, it will be rapidly exhausted if we do not replenish our supplies each day.

The Food and Drug Administration of the U. S. Department of Health, Education and Welfare has established a *Minimum Daily Requirement* for adults of 30 milligrams. This is just enough to prevent recognizable signs of vitamin C deficiency.

The Food and Nutrition Board of the National Research Council has issued *Recommended Daily Dietary Allowances* for vitamin C which are well above the F. & D. A. minimum.

Recommendations for Daily Vitamin C Intake
Ascorbic Acid (milligrams)

Men, all ages	75	Children, age 4-6	50
Women, all ages	70	Children, age 7-9	60
Women, pregnant (3rd trimester)	100	Children, age 10-12	75
Women, lactating	150	Boys, age 13-15	90
Infants, to one year	30	Boys, age 16-19	100
Children, age 1-3	35	Girls, age 13-15	80
		Girls, age 16-19	80

Use in Medicine. For some conditions, ascorbic acid is a necessity; for others, it is a help in restoring the body to normal. It is obvious that vitamin C is the cure for scurvy. Medical science has also found it to be helpful in the treatment of burns, in the repair of fractures, in high fever, in shock, in surgery and in exposure to extreme temperatures.

Of special importance is the use of ascorbic acid by pregnant and lactating patients. The physician must see that the infant receives his share of the essential vitamin, and that the mother's supply is not depleted.

Pharmaceutical manufacturers prepare many forms and potencies of vitamin C for the physician to prescribe.

Which Foods Are Best? Vitamin C is present in many foods. Citrus fruits — oranges, lemons, grapefruit, etc. — are generally good sources. Other fruit, certain green vegetables, tomatoes and potatoes are also sources of the vitamin. There are wide differences, however, between foods and even between varieties of the same food. The differences among commercially canned juices are graphically shown in the following table compiled by the U. S. Department of Agriculture:

Juice	Minimum	Maximum
	mg. ascorbic acid/100 mg. juice	
Apple	0.2	3.6
Grape	0	4.7
Grapefruit	10.0	49.0
Orange	9.7	70.0
Pineapple	5.4	18.0
Tomato	2.5	32.0

A Public Health Problem. It's an ironic situation that Americans, who have a plentiful and varied diet available to them, have been found by responsible researchers to have subclinical and recognizable vitamin C deficiencies.

The public relies on processed juices to supply a large part of its daily vitamin C requirement. All unknowing, it often fails to receive even a token amount because of the variations shown.

For these reasons — *widespread deficiencies and inadequate intake* — it is desirable to standardize the vitamin C content of processed fruit and vegetable juices at levels which will guarantee a significant amount of the vitamin per each serving of juice. Diet experts believe that such standardization is in the public interest. It may be achieved by the simple addition of pure, crystalline vitamin C. The Canadian government has recognized the value of this idea and has set a standard which all "vitaminized" apple juice must meet.

Saved: Natural Color and Flavor. Many delicious fruits which are quick frozen lose their natural color and delicate flavor during thawing. By adding pure *l*-ascorbic acid to these before freezing, processors can protect the natural color and flavor during thawing and for some time after. The ascorbic acid acts as an antioxidant; it "takes up" the oxygen in the air before that oxygen can trigger the reactions which cause the undesirable changes.

Vitamin C has been used for more than 15 years as the preferred antioxidant in frozen peaches, apricots, apples, berries, bananas, pears, pineapple, fruit purees and fruit cocktail. It has been used also in canned fruit and fruit juices, sauerkraut, pickles, beer, cured meats, milk, and mushrooms.

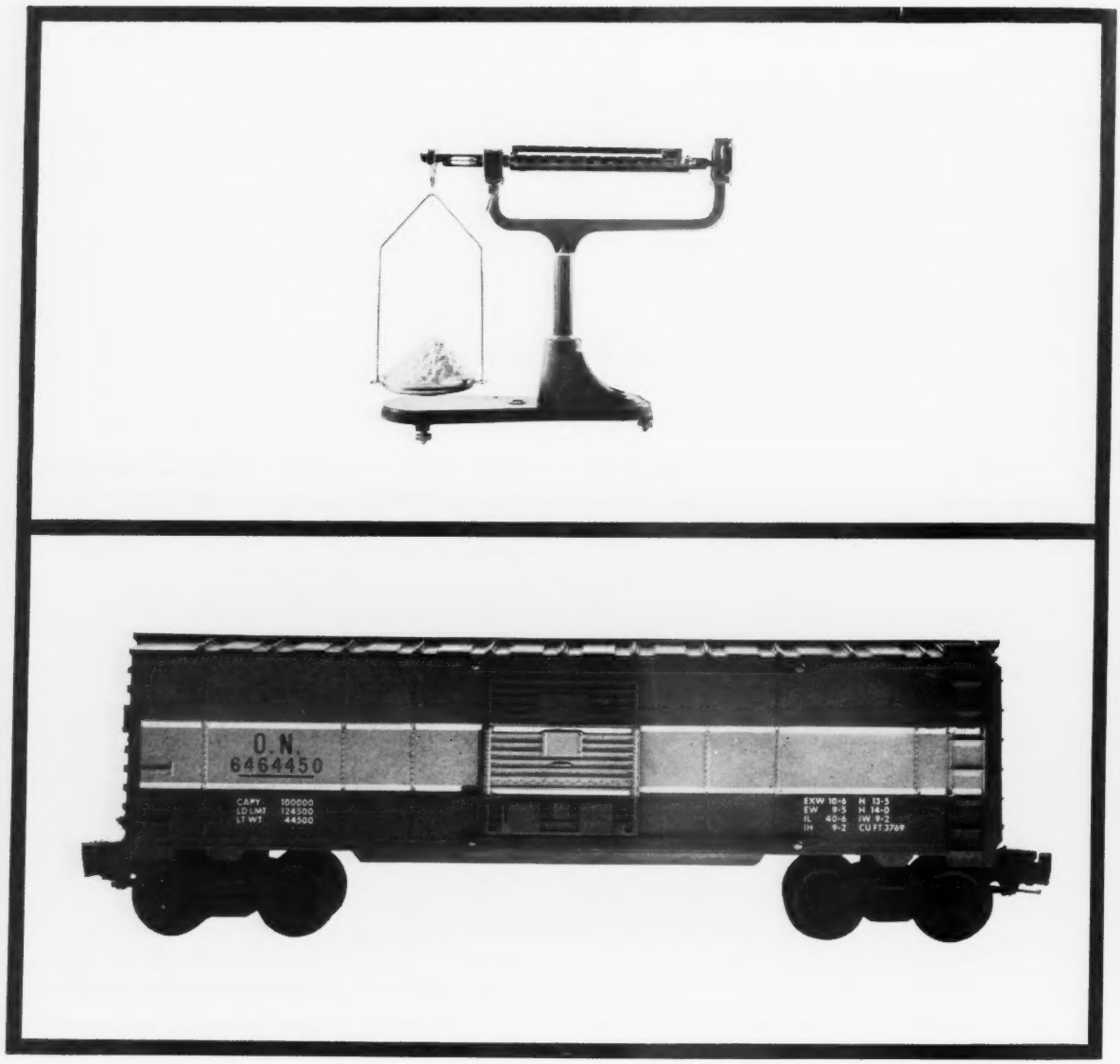
Homemakers seeking variety in the fruit and fruit juices served to their families will be influenced to buy the product to which sufficient *l*-ascorbic acid has been added to allow a label claim. When a nutritive claim is made for a food, a declaration must appear on the label. One form reads:

> *"One four-ounce portion provides 100% of the minimum daily adult requirement of vitamin C."*

Processors using the twin benefits of *l*-ascorbic acid — nutritive value and antioxidant effect — are delivering more attractive, more palatable, more popular, and more valuable foods.

•

Yours For the Asking. Summarizing our present knowledge of this vitamin, this article is one of a series published by the Vitamin Division of Hoffmann-La Roche Inc. Reprints of this, and all others in the series, are available without charge. Reasonable quantities will be available to those in education who wish to use the material in their teaching. Send your request to Vitamin Division, Hoffmann-La Roche Inc., Roche Park, Nutley 10, New Jersey; in Canada to Hoffmann-La Roche Ltd., 1956 Bourdon Street, St. Laurent, Montreal 9, P.Q.



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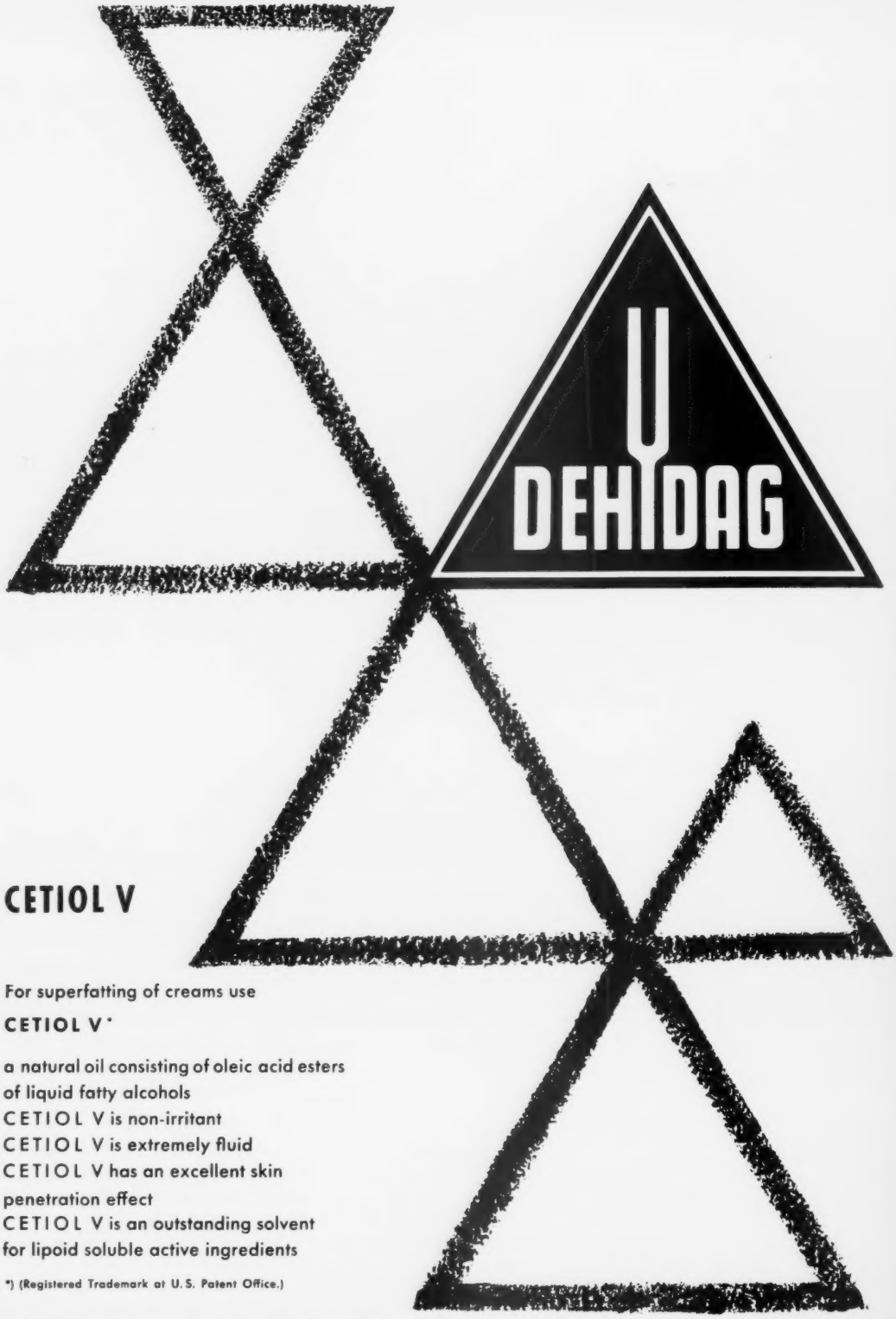

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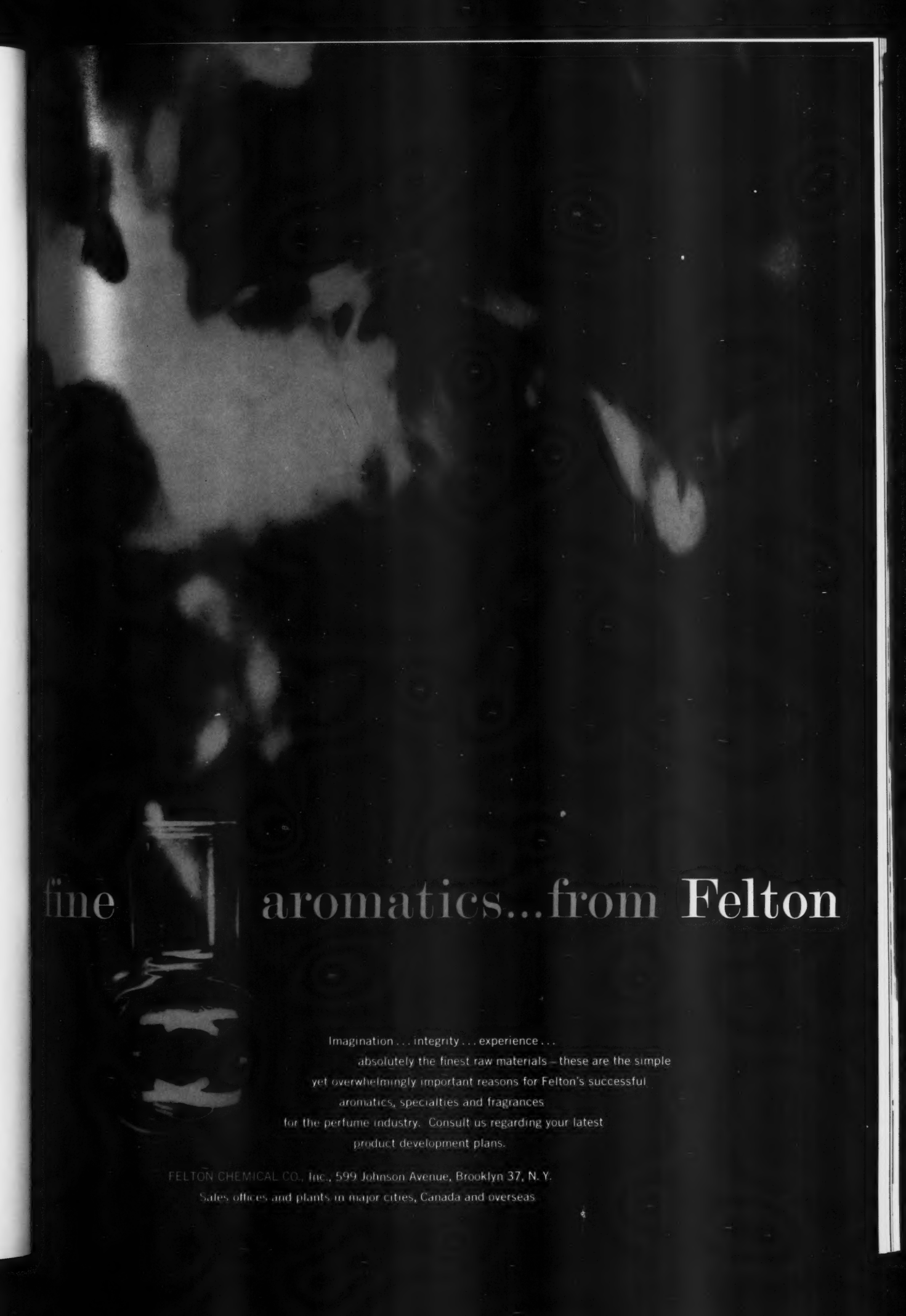

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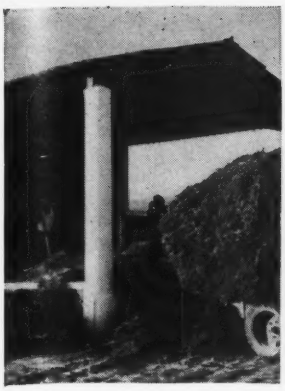

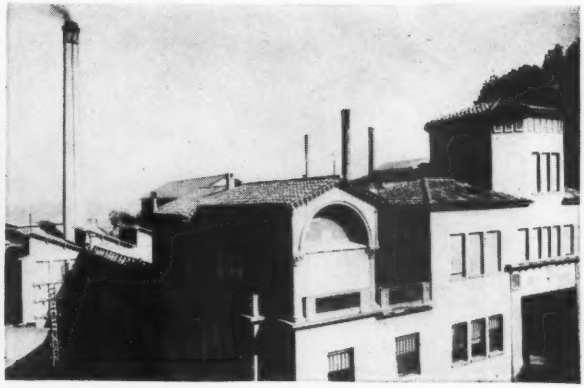

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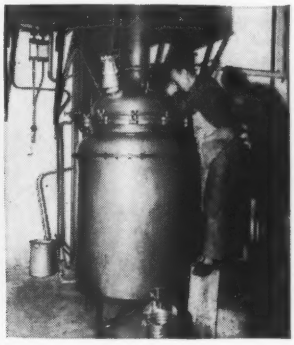

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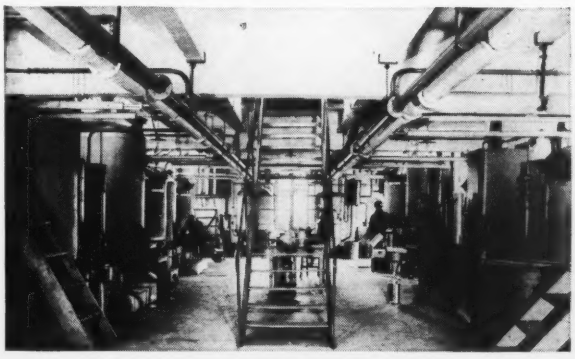
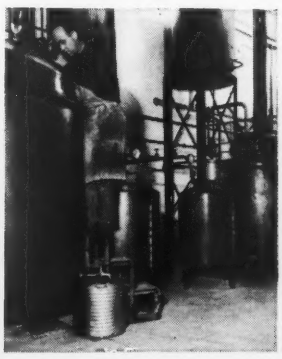
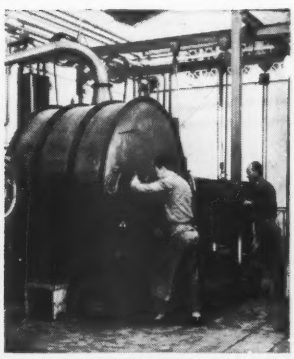

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AT ALL AGES

PRODUCT POSSIBILITIES

Market	Size	Sales Potential (Multivitamins)	Cyanocobalamin (Vitamin B_{12}) Provided Daily
PRENATAL	More than 4,000,000	More than $100,000,000	Up to 25 micrograms
INFANT	More than 8,000,000 (less than 2 years old)	More than $120,000,000	Up to 25 micrograms
CHILDREN AND ADOLESCENTS	More than 50,000,000	More than $600,000,000	Up to 25 micrograms
PATIENTS UNDER STRESS*	In the millions	In the multimillions	Up to 25 micrograms
"40-PLUS"	Nearly 60,000,000	More than $0.5 billion	Up to 10 micrograms
"65-PLUS" (GERIATRIC)	14,000,000 —Plus	$400 million —Plus	Up to 25 micrograms

*Serious and prolonged

New Discoveries About Vitamin B_{12} (Cyanocobalamin) Renew and Enhance Medical Interest in All Vitamins

New product possibilities and market potentials for Vitamin B_{12} and Multivitamins are steadily on the increase . . . by virtue of a veritable flood of nutritional and clinical reports from a multitude of researchers exploring the manifold significance of Cyanocobalamin. Vitamin B_{12}* is the most potent vitamin—physiologically, clinically, and commercially . . .

12 BASIC REASONS FOR EXPANDING B_{12} MARKETS

As you can note in the tabulation of PRODUCT POSSIBILITIES (page opposite), the markets and sales potentials for modernized Multivitamins providing optimal levels of Cyanocobalamin are indeed vast. To explain why these potentials are so great and are still growing, here are 12 major highlights from today's news about the most newsworthy vitamin:

1. Vitamin B_{12} is a vital factor in basic metabolic processes, including synthesis of nucleoproteins.

2. Cyanocobalamin is essential for human nutrition at all ages.

3. It is required for normal production and maturation of red cells, at all ages—hence for prevention of pernicious anemia.

4. The integrity of the oral and gastrointestinal epithelium is vitally dependent upon an adequate intake of this vitamin.

5. It is required for the metabolic processes involved in the functional integrity of myelinated fibers in the central nervous system and peripheral nerves.

6. A vital factor in general health and vigor, vitamin B_{12} intake must be adequate to prevent ultimate physical and mental deterioration, as manifested in pernicious anemia.

7. NEVER DISPENSABLE! The oral requirement for normal non-pregnant adults has been estimated to be about 5 micrograms daily, while the parenteral requirement is thought to be 1 microgram.

8. Because of their greater metabolic demand, children may require relatively much more Cyanocobalamin than adults.

9. Possibly, "hidden hurt to the unborn" (such as congenital malformation) may result if significant vitamin B_{12} deficiency develops EARLY in pregnancy.

10. Many GERIATRIC patients have been found to have low blood levels of vitamin B_{12}—supplementary vitamin B_{12} may be indicated.

11. IN STRESS: Considerable evidence favors the view that vitamin B_{12} may be one of the vitamins the requirement for which is increased by serious, prolonged stress.

12. IN NUMEROUS DISORDERS, multivitamins with high levels of Cyanocobalamin are being used by physicians who are convinced that extraordinary stress increases vitamin needs.

*By weight

OUTSTANDING ADVANTAGES OF CYANOCOBALAMIN U.S.P.

Cyanocobalamin U.S.P. is Crystalline Vitamin B_{12}, with officially recognized U.S.P. status. Crystalline Vitamin B_{12} is outstandingly safe—it is best for parenteral administration because virtually free from side effects.

Clinical acceptance has been clearly established: Cyanocobalamin U.S.P. was used in the majority of the published clinical studies on the value of Vitamin B_{12}. Moreover, because of precise uniformity, pharmaceutical behavior determined on one lot of Crystalline Vitamin B_{12} will be true on all successive lots. And, in certain formulations the crystalline form of the vitamin is more stable than the concentrate.

Thousands of physicians have been impressed by the Merck Crystalline Vitamin B_{12} exhibit and the new 72-page exhibit booklet spotlighting the safety of Cyanocobalamin U.S.P.: "For the benefit of your patient, insist on Crystalline Vitamin B_{12}—i.e., the only Cyanocobalamin U.S.P. . . . Make sure that Cyanocobalamin U.S.P. is on the label."

MERCK SERVICES—MULTIPLE AND UNIQUE

First with Vitamin B_{12} as well as other vitamins, Merck celebrates in 1958 the eleventh anniversary of the discovery of Cyanocobalamin by Merck researchers.

For more than a decade Merck has steadily expanded its progressive technical investigations of every facet and every application of the most potent vitamin. Vast data have been amassed and kept up to date as regards clinical experience, new product development and every type of problem involved in analysis, labeling, and marketing of Vitamin B_{12} preparations.

Now Merck Production supplies Crystalline Vitamin B_{12} and Cobalamin Concentrate in a full selection of types—plus an extensive variety of the other vitamins.

In addition here are five uniquely helpful Merck services to automate your vitamin marketing:

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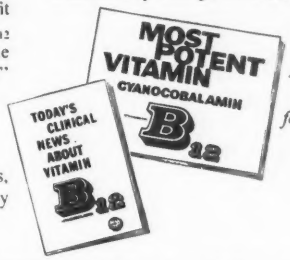
2. The Merck Memo news-features help to spark your ideas for new vitamin products.

3. Merck Literature Service (now exceeding 100 pieces on vitamins) is designed to aid your product development staff.

4. The Merck Technical Service staff is ready to assist you on problems in formulation, compatibilities, labeling, and specialized control procedures you may need to guard your product quality . . .

5. Merck Promotion is building nation-wide physician interest in—and acceptance of—YOUR vitamin products. Merck exhibits and exhibit booklets pre-sell your Vitamin B_{12} products.

If you are planning any product development involving the most potent vitamin or any other vitamin, you'll be underway faster and with fewer headaches by calling Merck FIRST.



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Tegin...

Glyceryl Monostearate — Self Emulsifying. For neutral greaseless creams, lotions, ointments, suntan creams.

Tegin 515...

Glyceryl Monostearate — Non Self-Emulsifying. Used in conjunction with auxiliary emulsifiers.

Tegin P...

Propylene Glycol Monostearate — Self Emulsifying. For greaseless creams—brushless shave, foundation, suntan: lotions — foundation, suntan, ointments.

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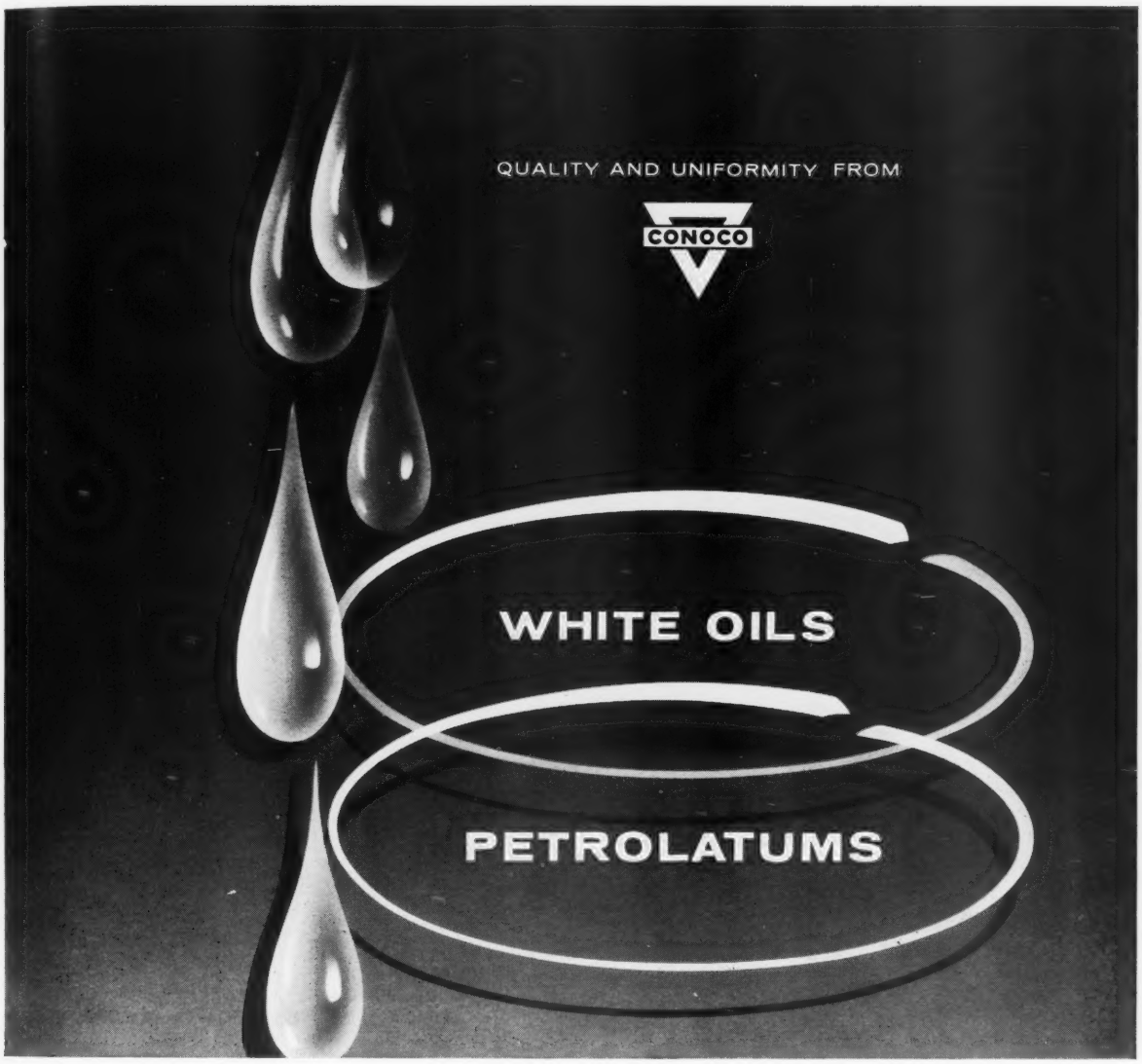

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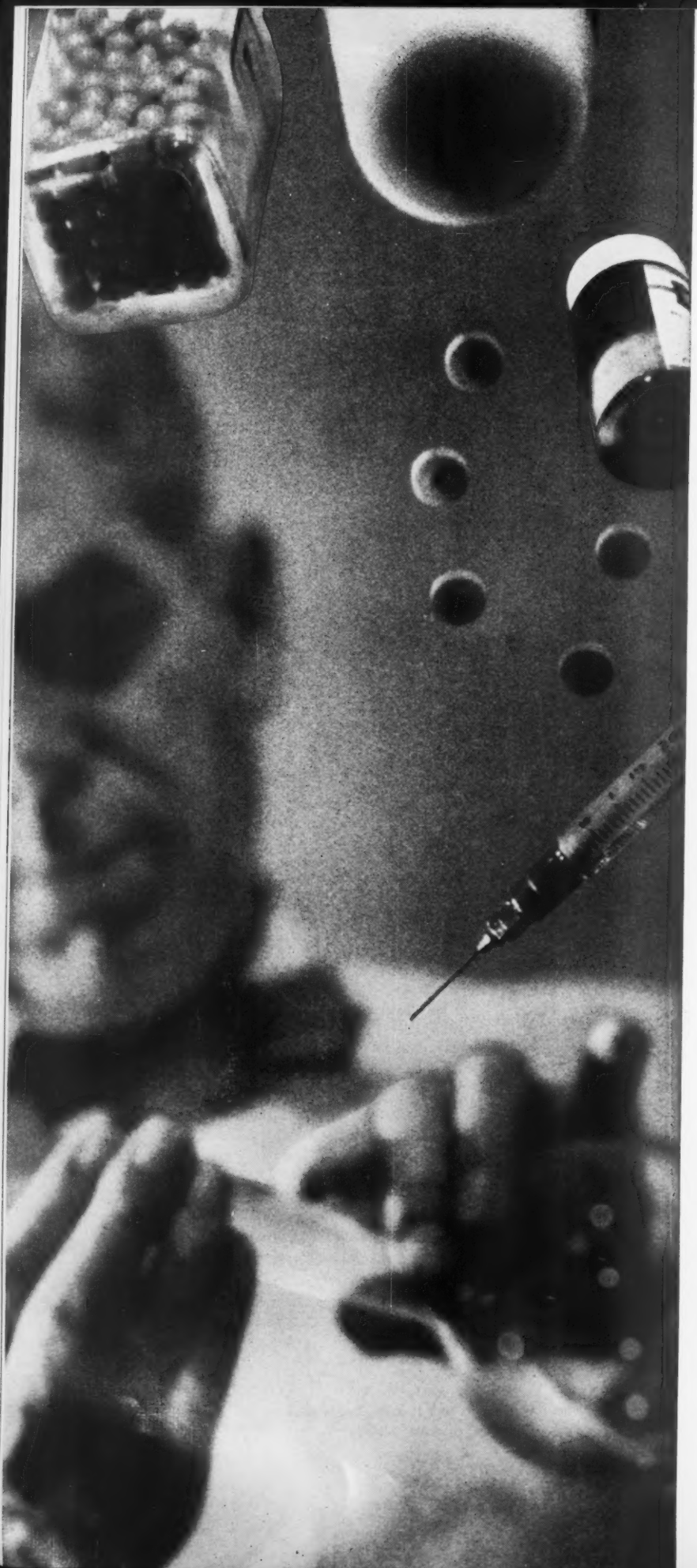

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CARBOWAX polyethylene glycols

Here are ten anhydrous, water-soluble compounds that make effective, low-cost vehicles and carriers for your medicaments.

In tablet formulation, CARBOWAX polyethylene glycols shorten wetting and drying processes as well as costly double compression. They also make ideal non-caloric tablet coatings that can be applied in half the time required for sugar coating.

Ointments based on CARBOWAX polyethylene glycols spread on evenly and adhere well even if the skin is moist. And, ointments based on CARBOWAX polyethylene glycols can be quickly and easily removed with a water rinse.

With the wide range of viscosities to choose from, you can formulate suppositories with any desired degree of stability and disintegration rate. And, research indicates that low viscosity members of the CARBOWAX family may be used interchangeably with propylene glycol as intramuscular injection vehicles.

Find out how these unusual materials can improve your profit picture. Write for the newly-published booklet, "CARBOWAX polyethylene glycols." Write . . . Department B, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, New York.

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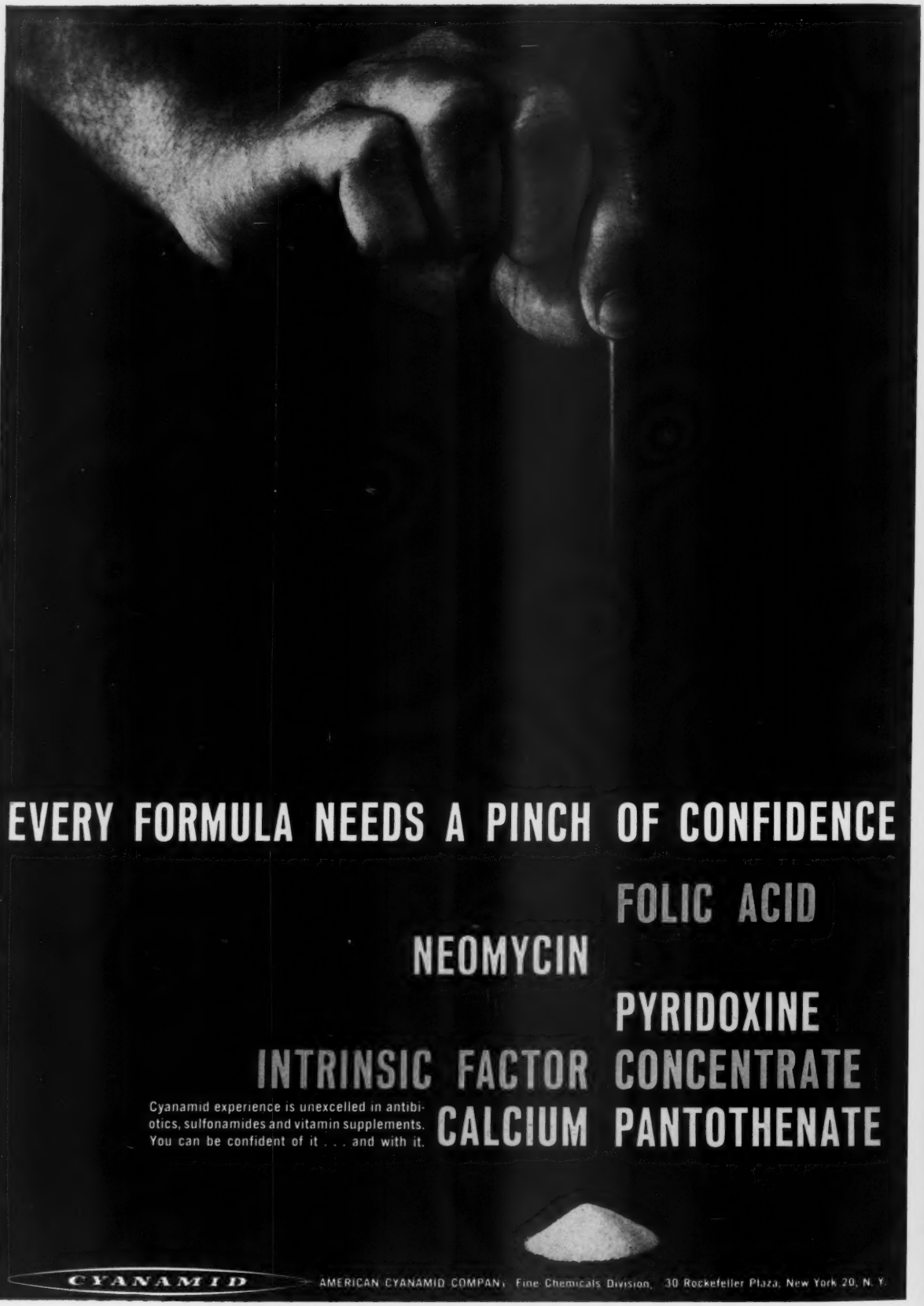
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It takes only one glance and a stroke of the comb to tell when hair has been rinsed with cream formulations containing TRITON X-400. By removing soap film and providing necessary lubrication without grease, this cationic quaternary ammonium compound makes hair silky soft and pleasingly lustrous. At the same time, TRITON X-400 reduces static electricity to make hair more manageable and easier to comb. Put TRITON X-400 to the test. See your Rohm & Haas representative or write direct for samples.

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In the fascinating "numbers" game of modern chemistry, molecules and molecular weights can be shuffled around like cards into almost endless combinations . . . *winning* ones for the company that capitalizes on these possibilities for product improvement. When today's successful manufacturer determines what the public wants (and where competition fails to provide it) he can call on the chemist to deal his products a significant, sales-making difference. The chemicals reported on here, some new, some old, have helped many manufacturers of cosmetics and pharmaceuticals to win when the competitive chips were down.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

Route to:

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GLAMOUR LOTIONS GET LIFT FROM POLYETHYLENE GLYCOLS

When it comes to polyglycols for cosmetics and pharmaceuticals, you pick your weight and take your choice. Dow's family of 12 polyethylene glycols (broadest line commercially available) offers different molecular weights with different properties. The polyethylene glycols with average molecular weights from 200 to 600 are all viscous, clear, colorless, somewhat hygroscopic liquids with low vapor pressure. Those with molecular weights of 1,000 or more are wax-like or hard solids. By adjusting the proportions of liquids and solids in a mixture, it is possible to prepare a wide range of useful liquids, pastes, and solids of varying viscosities and melting points.

If more beauty queens seem to be taking more prizes these days, it may be because aids to feminine charm are more potent than ever. The relatively new chemical family of the polyglycols is finding increasing usefulness in the cosmetics field as bases or carriers to increase the effectiveness, safety, and ease of application of many toiletries.

Face value high. In formulas for face cream, protective creams, astringent creams, hair conditioner creams, they act as very effective solubilizing agents and impart good water solubility. For make-up and face powders, the higher molecular weight "PG's" serve as the tie that binds. They help pancake make-up stay in place, once it's applied. They serve as antidusting agents for powders and synthetic detergents.

For more-than-skin-deep effectiveness, the polyethylene glycols offer water-solubility, blandness, wide compatibility, and low toxicity . . . essential to many creams and lotions. Water-solubility permits them to be removed easily from the skin or clothing that may come into contact with such a base. They yield end products with superior softening, conditioning and skin smoothing properties, free from unpleasant tacky feeling. This allows them to be used as a substitute for sorbitol, glycerine, and lanolin, with important savings in cost.

In pharmaceuticals, too, the polyethylene glycols are extremely useful bases and carriers for water washable, nonstaining salves and ointments. High compatibility makes them excellent solvents for many common medicaments and assures good contact of the therapeutic agent with the area to be treated or protected. When in contact with the skin, the polyethylene glycol allows for the swift release of the medicament. Some of these agents are sulfur, phenol, ammoniated mercury, mercuric oxide, quaternary ammonium compounds, boric acid, resorcinol, salicylic acid, coal tars, gentian violet, calamine, propionates, undecylenates, sulfa drugs, antibiotics, hormones, cortisone.

The polyethylene glycols are of a relatively low order of toxicity. Re-

Twelve different polyethylene glycols ranging from liquid to solid offer unique opportunities for product improvement.

peated patch tests on people have shown the "PG's" of no significance in causing skin irritation or sensitization. And, of course, polyethylene glycols E-400 and E-4000 as well as polyethylene glycol ointment are listed in the U.S. Pharmacopoeia XV. Polyethylene glycol 300 appears in the National Formulary X.

What's next? Although a relatively new series of products to the pharmaceutical chemist, polyglycols have already yielded a rich harvest of helpful applications. One such promising field: the use of high molecular weight polyethylene glycols in tablet coating and as a binder in tablet compression.

DOWANOL DPM:

helps "togetherness" pay off for lotions

Cloudy sales days inevitably come to cosmetic and drug products that suffer "ingredient breakdown". Given a choice, customers will buy the product that looks clear and clean as opposed to the ones that look cloudy. And who can blame them?

Dowanol® DPM (dipropylene glycol methyl ether) is actually a supersolvent that performs wonders when it comes to keeping ingredients coupled. Even under the low temperatures frequently encountered in shipping, Dowanol remains the perfect "mixer", so that products arrive at the retailers looking just as clear and bright as the day they left the plant.

Moreover, Dowanol DPM is safe for applications involving skin contact. It caused no irritation or sensitization of the skin when tested undiluted on 250 humans. Its oral, skin absorption, and vapor toxicities are low.

DPM is already serving as perfume fixative, lotion coupling agent, solvent in nail polish lacquers, extraction and crystallization agent in antibiotics. Of course, Dowanol DPM must be evaluated for each application.

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basic to the drug and cosmetic industry

Aromatics • Emulsifiers • Alkalies
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YOU CAN DEPEND ON

DOW

ETHANOLAMINES: Crystal-clear outlook for shampoos

Time was when manufacturers of cosmetics, shampoos, lotions and other specialty items found that changing formulas to improve products — and profits—was fine, except for one accompanying problem. Coming up with an emulsifier having exactly the right properties for the new formula was often difficult.

Then came all-purpose ethanolamines and the problem was just a memory. Mixing different ethanolamines with fatty acids produces a wide assortment of emulsifying characteristics. The required viscosity is attained easily and accurately.

Regardless of the method or fatty acid used, or the other variables involved, it's easier to formulate emulsions with ethanolamines.

The trend toward lighter colored shampoos gets an assist from ethanolamines' flexibility. To make these shampoos requires an ethanolamine . . . such as the new, light, clear Dow triethanolamine.

Thanks to their versatility, Dow ethanolamines have been able to make "product" and "profit" hold together for manufacturers with emulsion problems. Dow has more facts awaiting your "on company letterhead" request.

For further information on these products and other Dow chemicals, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 757D.

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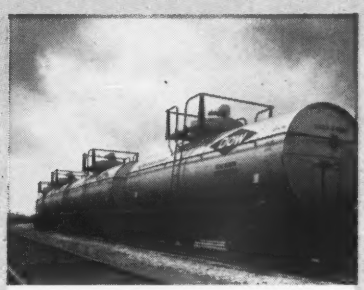

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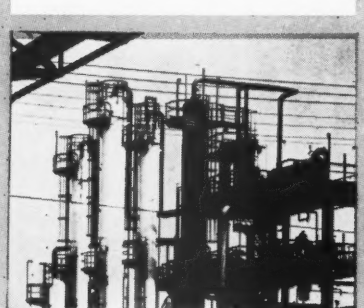

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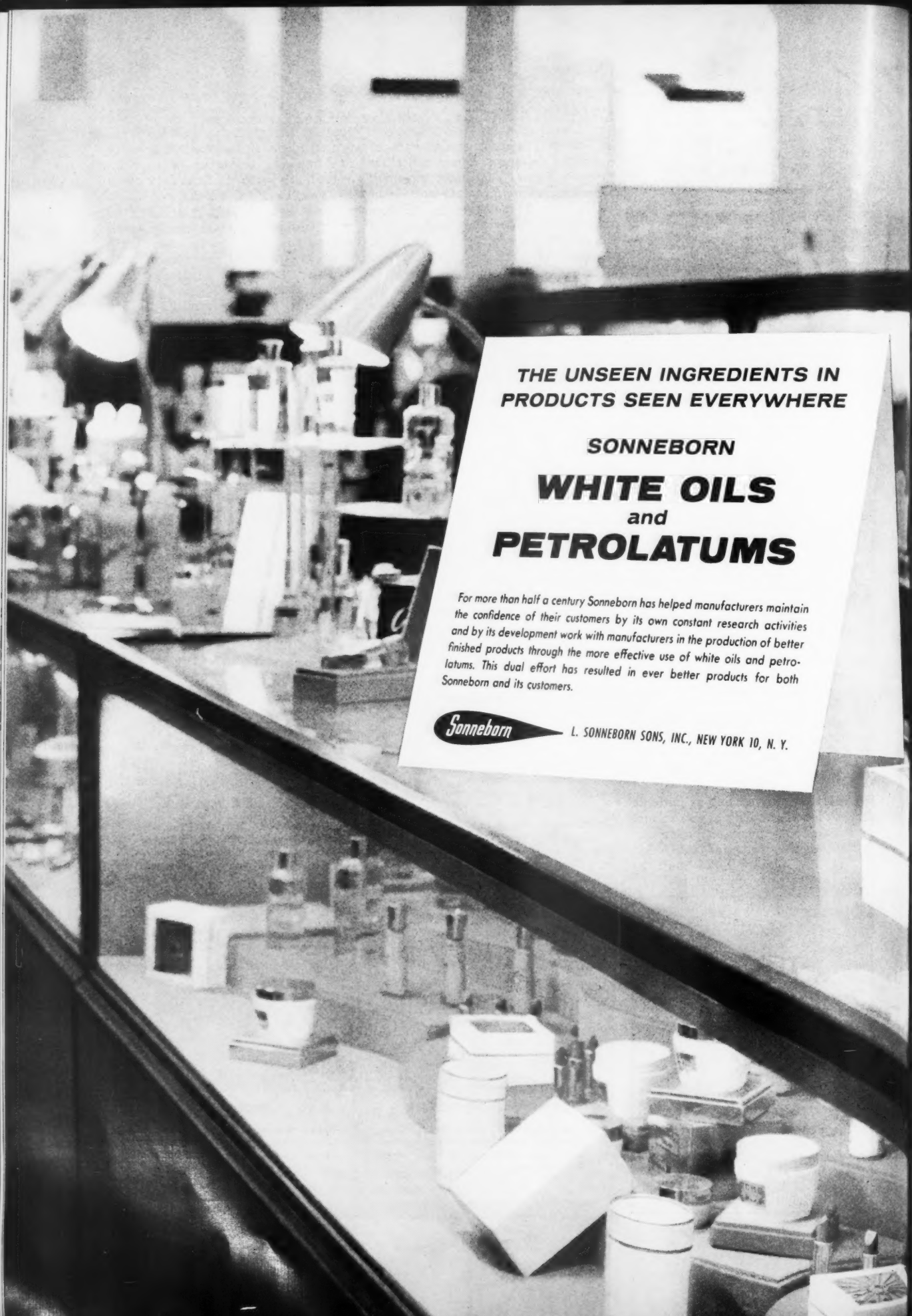
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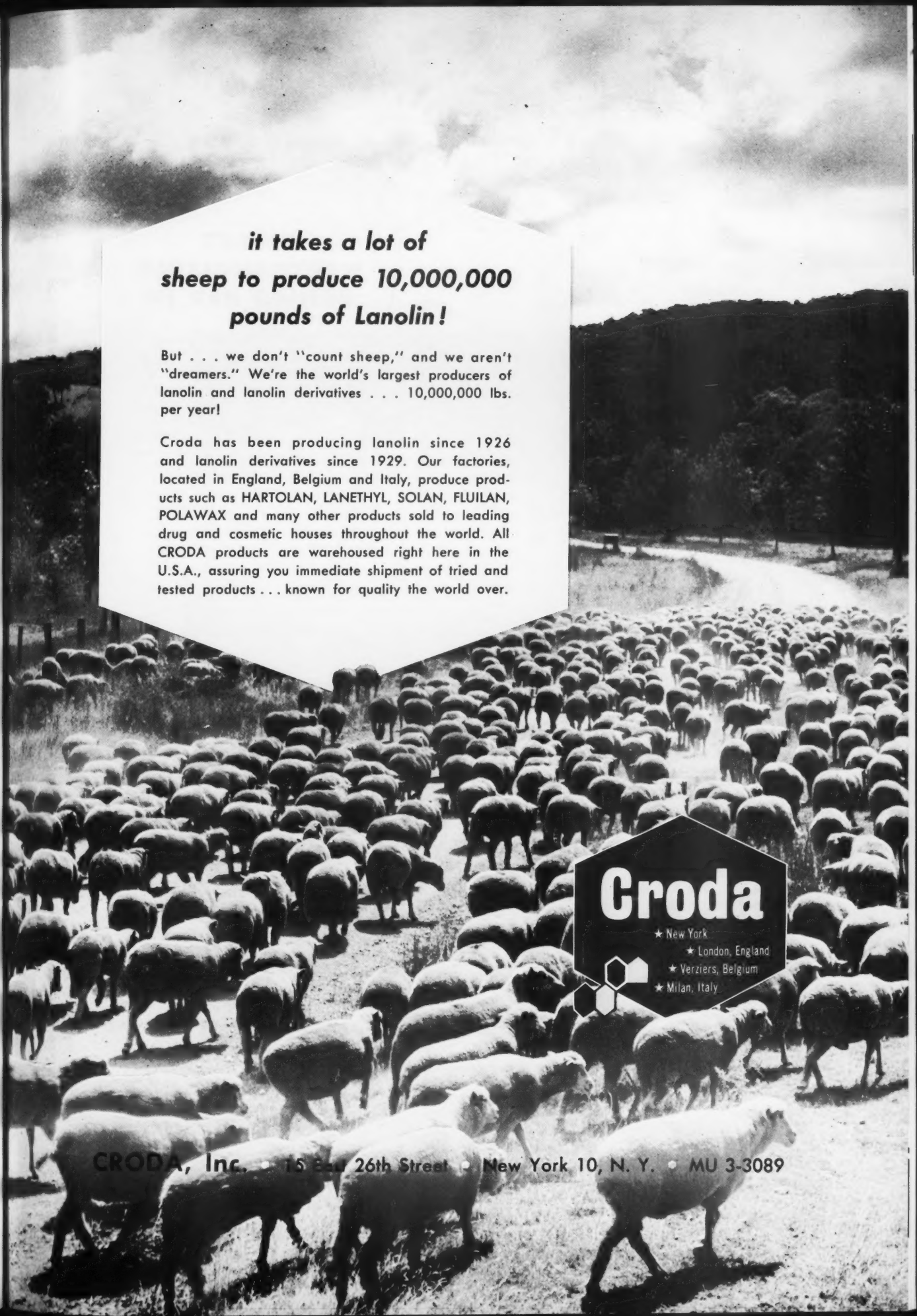
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CHLORHYDROL (aluminum chlorhydroxide complex)—for anti-perspirant creams, lotions, sprays and powders.

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Reheis can tailor any one of their anti-perspirant chemicals to meet the needs of your products. We suggest you write for free data and samples . . . and learn how Reheis quality can help your product's *repeat*-sales record.

REHEIS CHLORHYDROL S-5 Anti-perspirant gives *your* product *all* these advantages.

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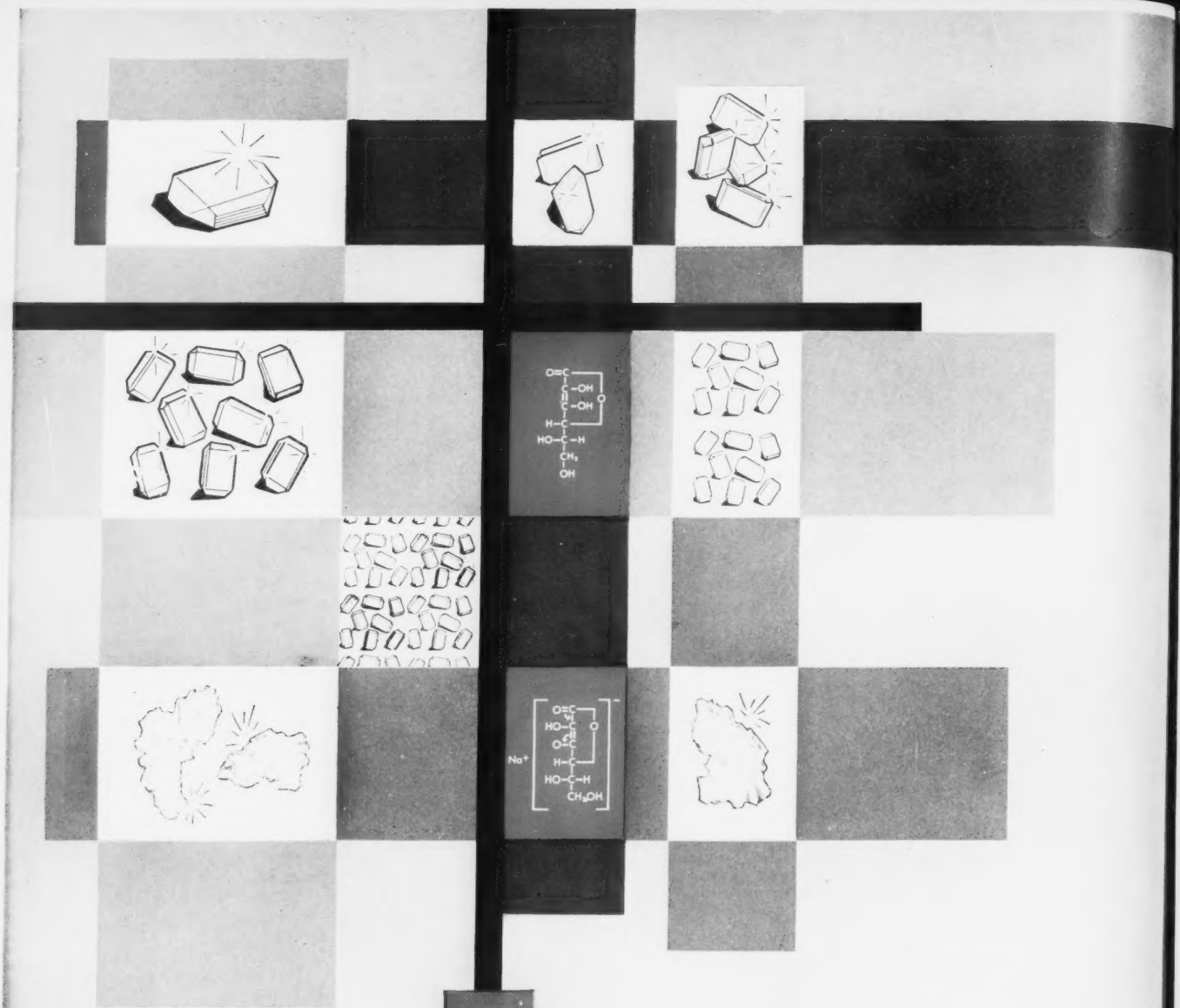

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Contamination from Bodies

Recently, when most of the domestic airlines reinstated an embargo on shipment by air of biological materials, such as cultures and viruses, it was rumored that the non-medical thinking causing this arbitrary decision involves a possible plane crash into a watershed or a public reservoir. Public health authorities, when questioned on this problem, stated that there is probably more danger from the bacteria in the bodies of airplane passengers than from properly packaged etiologic agents aboard. However, the airlines were not considering human beings. This seems to be something to think about.

Syntex Receives N. I. H. Contract

Syntex, S. A., of Mexico City, has been awarded the first contract to a chemical firm outside the United States by the National Institutes of Health. The purpose of the contract is to find a chemical steroid agent which will possibly be effective in treating breast cancer. Syntex is making quantities of certain rare steroids not generally available, which will be used in a breast cancer screening program being conducted by the National Cancer Service Center of the N. I. H.

Vitamin Advertising Checked

Sunway Vitamin Co., Chicago, has signed a consent order with the Federal Trade Commission prohibiting misrepresentation of the effectiveness of Super Sunway Vitamin Tablets with Iron in supplying pep and more red blood and in relieving nervousness and restlessness.

Schering Research Grants

Grants for independent scientific and medical research totaling $431,000 were made by Schering Corporation during the first six months of 1958. The amounts given to independent research hospitals, institutions, and private research investigators more than double those granted during the first six months of 1957.

Principal expenditures went for additional research into projects on mental illness and arthritic and rheumatic disorders. Additional expenditures were made for new areas of research covering protein hormones, studies of blood chemistry, studies of the effects of various drugs on animals and anti-shock drugs.

Abbott Wins Direct Mail Awards

Abbott Laboratories has received two top awards from the Direct Mail Advertising Association for its mail advertising during the year ended August 1. Abbott received the best of industry award in the house organ category for What's New, its publication for the medical profession. Abbott's product advertising pieces were selected as best of industry in the all product category.

Polio Grants by National Foundation

The National Foundation has made nineteen grants, totaling $1,184,432, for research into the after-effects of poliomyelitis and for the rehabilitation of victims of the disease. Eleven of the grants went to regional rehabilitation centers, and the others went to scientists for studies of the prevention and treatment of the crippling after-effects of the disease. Among the former was a grant of $96,396 to the New York University-Bellevue Medical Center to administer a program for research, teaching and patient care at the New York Respiratory and Rehabilitation Center at Goldwater Memorial Hospital, Welfare Island.

Four States—Michigan, Texas, Florida, and California—have been taking the brunt of the season's polio attack. Reports were that Detroit would be the hardest hit city. However, the country as a whole seemed to be experiencing a record low year for the

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ESTERS
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Butyl Lactate Butyl Stearate
Dibutyl Phthalate Ethyl Acetate
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NITROPARAFFINS
Nitroethane 2-Nitropropane
Nitromethane 1-Nitropropane
Alkaterges Diamines
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post Salk vaccine period. The nation showed 2,223 cases for the thirty-five weeks ended August 30, compared with 3,879 cases for the same period of 1957, and 13,711 average for the years 1953 through 1957. Despite this decrease, 40 per cent of the cases that occurred during the thirty-five-week period were in four states.

Federal Fair Trade Legislation

Although the Federal fair trade legislation, known as the Harris bill, died in committee in the current Congress, the Bureau of Education on Fair Trade expresses optimism as to the progress made in the 85th Congress. The Bureau points out that the House Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce, 1) Redrafted portions of the Harris bill to clarify its intent and strengthen it against attacks on its constitutionality; 2) Reported the bill favorably to the full House Committee on Interstate and Foreign Commerce; 3) Held and completed hearings on the bill. Also, in the Senate, a special Subcommittee on Fair Trade of the Committee on Interstate and Foreign Commerce began hearings which are expected to be continued throughout the balance of this year. Parallel public hearings were held and completed by the Subcommittee on Retailing, Distribtuion, and Fair Trade Practices, headed by Senator Hubert Humphrey (D., Minn.) of the Senate Select Committee on Small Business.

It must be realized that the plan of the Bureau, made public late in 1956, was for the year 1957 to be used in organizing small business and other groups interested in fair trade. The bill was not to be announced or introduced into Congress until 1958, as this was the year when the members of Congress would be facing reelection and this was the time that pressure could be brought to bear upon them. This approach did not seem to bring the results that were anticipated.

Now the bill must be reintroduced into the new 86th Congress next year, and no one knows just what the composition of that Congress will be and how its members will feel about fair trade. The general feeling is that both houses of the new Congress will be more strongly Democratic than those of the present Congress, and whether this is good or bad for trade is still another question that must go unanswered. Certainly the composition of the next Congress will not be affected to any appreciable extent by the candidates' attitude toward fair trade.

It seems to us that when the Harris bill is reintroduced in the next Congress, it will stand or fall strictly upon the judgment of the members of the House and Senate as to how their constituents feel about its enactment. And if the bill should be enacted by Congress, what about President Eisenhower's opinion of the matter?

Glidden Synthetic Menthol Plant

Construction of a $2 million plant for production of synthetic laevo-menthol, which has heretofore been produced solely from imported natural oils, is being undertaken by the Organic Chemical Division of the Glidden Company which has its headquarters in Jacksonville, Florida. Capacity is said to be approximately 40 per cent of the Nation's requirements, and the plant is designed for any required expansion. Dr. W. David Stallcup, vice-president in charge of the Organic Chemical Division, says the company has embarked on an intensified program for further development of other aromatics which are produced from domestic raw materials. These include geraniol, citronellol, hydroxycitronellal, and citral.

Pharmaceutical Industry Leads in Research

Apparently the pharmaceutical industry in 1957 was far out in front of other industries as to the percentage of sales volume spent on research. On an estimated volume for the pharmaceutical industry of $1.7 billion at manufactures' levels for 1957, $127 million was spent on research for a percentage of sales of 7.5. In a survey of 24 industries—not including the pharmaceutical industry — the American Management Association reports that research and development expenditures in 1957 averaged 2.8 per cent of 1957 sales. Industries reporting the highest percentages were instruments 5.2 per cent; autos 5 per cent; electrical machinery 4.8 per cent; and aircraft 4.4 per cent. While we do not yet know what 1958 expenditures and sales will be in the pharmaceutical industry, we know that other industries will still be far behind this industry in research expenditures expressed as a percentage of sales. This evidenced by the fact that the survey shows that the largest increase in the budget for 1958 is 26 per cent, but the industry only spent 1.8 per cent of sales for research in 1957. Others showing large increases for 1958 are service machinery for an increase of 13.3 per cent on an expenditure of only 1.7 per cent in 1957; chemicals, an increase of 10 per cent on an expenditure of only 3.3 per cent in 1957; food and beverages, an increase of 8.3 per cent on a 1957 expenditure of only 1.2 per cent.

Schering Wins Photographic Awards

Schering Corporation was honored twice in the field of medical photography at the national meeting of the Biological Photographic Association held recently in Washington, D. C. First prizes were awarded to Schering's veterinary motion picture, Meti Steroids in Veterinary Medicine, and to the cover photograph of Schering's recruitment brochure, Careers with Schering, which was photographed for Schering by the medical photographer, Robert T. Duckworth. The Biological Photographic Association is the single national, professional society in the United States

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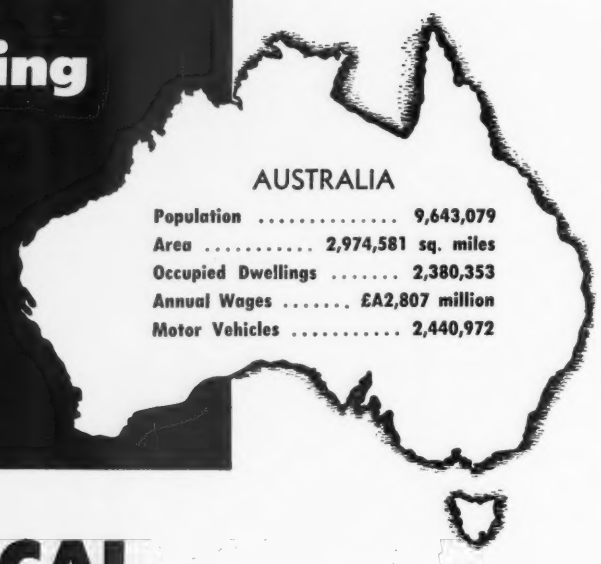

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A distributing and sales promotional unit specialising in ethical pharmaceutical products. Directed by technically qualified executives of many years' administrative and practical experience, Pharmedica maintains a medical detailing force and stock depots in all capital cities, and detailmen are closely supervised by personnel with field experience. Promotional campaigns including medical mailings and journal advertising can be formulated to suit principals' budgetary requirements.
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The prize-winning film is a one-half hour, full color and sound motion picture describing many valuable and effective uses of the Meti steroids in veterinary medicine. Published in January, the Careers with Schering booklet was created as a recruitment vehicle to be furnished to colleges, universities, pharmacy schools, and other educational centers.

Lanole Hair Claims Stopped

Lanole Products, Inc., Detroit, consent order to stop misrepresenting that its hair preparations prevent baldness, has been approved by the Federal Trade Commission. Lanole was charged with falsely advertising that its products will prevent excessive hair fall and baldness in a majority of cases and that the principal cause of these conditions is bad scalp hygiene and scalp infection. The great majority of cases, the complaint charged, is due to "male pattern baldness," and for this type Lanole's four preparations—Lanole Anhydrous or Professional Shampoo, Lanole Scalp Lotion, Lanole Lasco Ointment, and Professional Shampoo—are completely without value. The Commission ordered the company to clearly reveal these material facts in future advertising and to limit claims to cases other than the male pattern type. The order further forbids claims that Pattern Research Institute has done any research on hair or scalp conditions or with Lanole's preparations, or that it is an institute.

Vick Chemical Progress

Having crossed the $100 million sales volume for the first time, Vick Chemical Company reports sales of $107,042,993 for the fiscal year ended June 30, 1958, up 13 per cent from $94,796,434 reported for the previous fiscal year. Net earnings advanced 27.6 per cent to $10,070,239, or $5.01 a share, for the fiscal year ended June 30, 1958, from $7,889,375, or $3.89 per share, for the previous year.

The breakdown of sales segments include: ethical and veterinary drug sales, $44.7 million, up 17 per cent over the previous year; proprietary drug sales, $42.5 million, up 14 per cent; chemical and plastic sales, $13.4 million, down 5 per cent; and cosmetic sales, $6.4 million, about the same as last year.

Research and research facilities expenditures for the year were $5 million—double the amount spent by the company only three years ago. Of the $5 million, $3.9 million went for research, and $1.1 million for new research facilities.

Vick Chemical sales have expanded 12 times since the year 1937-1938, when sales were $8.9 million, to $107 million for the year just closed. Compared with this Vick states that ethical drug volume has expanded 11 times from $151 million in 1938 to $1.7 billion in 1958; proprietary drugs have expanded 2½ times, from $176 million in 1938 to $427 million in 1958; veterinary drugs have expanded 7 1/3 times, from $19 million in 1938, to $140 million in 1958; and chemical industry sales have expanded 6¼ times, from $3.7 billion in 1938, to $23.4 billion in 1958.

Wyeth Pediatric Grants

Grants for postgraduate pediatric studies will be awarded again in 1959 by Wyeth Laboratories. There will be 20 two-year grants, each carrying a stipend of $2,400. The first three years of the program will cost $195,000. Candidates for the pediatric fellowships may include interns, physicians who have recently completed their internship, military service or a U. S. Public Health Service tour, and research fellows. All recipients must be U. S. or Canadian citizens.

Publication for Warner-Chilcott

World-Wide Abstracts of General Medicine is a new medical magazine which will be distributed to between 125,000 and 150,000 U. S. physicians and medical institutions in the interest of Warner-Chilcott Laboratories Division of Lambert-Warner Pharmaceutical Company. Edited by Dr. Morris Fishbein, former editor of the Journal of the American Medical Association, and Martinus W. Woerdemann, chancellor of the University of Amsterdam. It is publication of the Excerpta Medica Foundation, a non-profit organization headquartered in Amsterdam which publishes a series of medical journals that are subsidized by various international government and philanthropic agencies.

Elmer Bobst, board chairman of Warner-Lambert, says the venture is "not a gimmick or a house organ," but "a service journal to the medical profession." He estimates the cost at more than $1 million annually. The first issue contained 40 pages including a special article on coronary disease by Dr. Paul Dudley White, abstracts from articles in several dozen worldwide medical journals, and seven and a half pages devoted to advertising Warner-Chilcott products.

Rising Costs and Health Insurance

There is a possibility that increasing health care costs may price health insurance out of reach of the public, according to Morton D. Miller, chairman of the Health Insurance Council, and second vice-president of the Equitable Life Assurance Society of the United States. Saying that rising costs and the extension of coverage for our senior citizens are two of the major problems facing voluntary health insurance, Mr. Miller detailed some reasons for rising costs as follows:

"By far, these increased costs have meant better medical care, leading to better health for all. On the other hand, there is little question but that some of

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the increased costs are unnecessary and that better future planning would help stabilize costs. Unnecessary costs, whether arising from abuse or ineffective use of the existing medical services and facilities, must be eliminated. Health insurers and the medical care professions must unite their efforts to justify those increases in the cost of health care and in the cost of health insurance, which are in the public interest. In the same way, we together have a tremendous responsibility to work effectively to remove unnecessary costs so that we may confidently state that there is no wastage of the public's medical care or health insurance dollars."

Placing the responsibility on the medical profession, Mr. Miller said:

"In the very complicated inter-relationship between medical care, health insurance, and the public, the key position is occupied by the doctor. It is the doctor, directing the care of the patient, who determines the quality and, to a large extent, the quantity of the patient's medical care. It is he who controls to a significant degree the way in which health insurance as a means of financing health care works out."

Hair Dye Damage Award

In a case brought against Roux Distributing Company by Vernell Braun, the Supreme Court of Missouri approved a $65,000 judgment for damages in an action for negligence in the failure to warn the buyer of a toxic ingredient in a hair dye. The label contained the usual FDA cautionary statement. However, after the case there was added to the label a direction for a preliminary patch test "before every application, including retouch applications." The court said: ". . . in manufacturing and distributing hair dye, the appellant is held to the skill of an expert in that particular business, 'to an expert's knowledge of arts, materials and processes,' and is bound to keep reasonably abreast of scientific knowledge and discoveries concerning his field and, of course, is deemed to possess whatever knowledge is thereby imparted."

Health Information Foundation Reports

The Health Information Foundation spent $524,060.98 during 1957. Of this amount $104,221.85 went for general administrative expenses; $106,424.54 for public education; and $314,687.95 for research. Income for 1957 was $496,920.10, of which $475,545.00 was from contributions. The deficit of $27,140.88 was intentional because in 1956 there was an excess of this amount received. At the start of this year the Foundation had a reserve fund of $200,000, and funds for general purposes of $540,743.10. The gradual reduction in total contributions was reversed during 1957, and the number of contributors increased considerably.

The Foundation has been highly complimented for its research efforts and these efforts have been cited as vital to the future growth of our system of medical care. According to HIF president, George Bugbee, "The prevailing assumption is that we are acquiring great knowledge of the social and economic dimensions of health problems."

"The greatest need for additional research lies in these areas," said Mr. Bugbee. "—defining how much increased use by the insured population represents needed care and how much is overdue; determining a better concept of the adequacy of care and its quality; analyzing and measuring the effects of insurance on hospital charges and physicians' fees. Further research in the social and economic aspects of health, in other words, is needed to properly inform the public and to guide planning for the future."

Rubinstein Gives Dental Care

Helena Rubinstein, Inc., is participant to a labor-management contract which is said to be the first contract to contain a non-profit dental plan. The contract was negotiated with Local 14-149 of the Oil, Chemical and Atomic Workers Union—A.F.L.-C.I.O. Effective November 1, the plan will be administered by Group Health Dental Insurance, Inc., of New York, which will pay the dentists' bills of Rubinstein employees, with the company paying the premiums —$1.65 per month. They can use their own dentists anywhere, but if the dentist is a participant in the plan, and the employee's income is $5,000 or less, all expenses are covered; if not, GHDI will not pay the dentist the difference between the plan's allowance and his charges. Also, under a rider, the contract covers all the fillings and extractions shown to be needed on the first visit to the dentist.

Unrestricted Aspirin Sales

"Keeping in stock and selling aspirin tablets in an original sealed container" by any merchant who has obtained a permit from the Board of Pharmacy, which grants the right and privilege to keep, dispense and sell at retail "patent" and "proprietary" medicines is lawful in the District of Columbia. Judge Harry L. Walker, of the Criminal Division of the Municipal Court for the District of Columbia, in a decision handed down September 15, found Safeway Stores, Inc. not guilty of a violation of the District of Columbia Pharmacy Act as charged by the Government of the District of Columbia in a complaint which came to trial July 8. A "checker" in a Safeway store in Washington, D. C. sold a bottle of 100 Bayer Aspirin tablets in an original sealed container to detectives of the Metropolitan Police Department on April 29, 1958, while there was no registered pharmacist on the premises.

An important new angle is to be found in this decision as compared with others of the same nature. Based on evidence submitted by the manufacturer of Bayer Aspirin tablets, the Court concluded that at

the time Congress passed the D. C. Pharmacy Act (1906), the producer of Bayer Aspirin held a valid U. S. Patent on acetylsalicylic acid, and a valid U. S. Trademark on the name aspirin which was assigned to acetylsalicylic acid. Two years after the enactment of the D. C. Pharmacy Act, the manufacturer also registered the word "Bayer" as a trademark with the U. S. Patent Office.

The U. S. Patent on acetylsalicylic acid expired in 1917 and the Bayer Company lost its rights to the trademark aspirin in 1921 as the result of litigation. "It seems clear, therefore," said Judge Walker, that at the time of the enactment of the statute, 'aspirin' was a 'patent' and a 'proprietary medicine' and therefore exempt from the provisions of the act which required drugs other than 'patent' or 'proprietary' medicines, and some other items, to be sold under the supervision of a registered pharmacist. Surely, if the same product which was protected by letters patent in 1906 was deemed to be one suitable for sale by other than a licensed pharmacist, the mere expiration of the latters patent by the passage of time would not change its innocuous nature. It is reasonable, therefore, to presume that the Congress intended all chemical compounds which fitted into the category of either 'patent' or 'proprietary' medicines at the time of the enactment of the statute to be within the chemical compounds exempted from the statute regardless of the known fact that the latters patent would in time expire."

The makers of Bayer Aspirin tablets introduced into the case an opinion poll taken in the District of Columbia between June 5 and June 20, 1958, of what the judge termed "a fairly representative cross-section of the citizenry of the District of Columbia." The poll indicated that of 1,000 interviewed, 78 per cent thought "Bayer" aspirin to be a patent medicine, 15 per cent thought it not, and 7 per cent had no opinion.

Two doctors of medicine testified for the maker of Bayer Aspirin, one a former pharmacist, that Bayer Aspirin tablets are in the classification of "patent" or "proprietary" medicines. The other physician, formerly associated with the Food and Drug Administration, testified "that in the Federal Food and Drug Administration the terms "patent medicine" and "proprietary medicine" are used interchangeably to refer to products "that are sold over the counter to be used in home medication" and that "Bayer Aspirin tablets were, during my employment by the Administration, and still are, classified as a patent or proprietary medicine by the Administration."

Vick Sells Perfume, Cosmetic Interests

Vick Chemical Company has divested itself of all its cosmetic interests, having sold them as of September 30 to Chesebrough-Pond's Inc. for an undisclosed amount of cash. Included in the sale were Prince Matchabelli and Simonetta perfumes and cosmetics, Seaforth and Black Watch men's toiletries, and Sofskin hand creams. Prince Matchabelli will be a wholly-owned subsidiary of Chesebrough-Pond's Inc. Vick president H. S. Richardson Jr. said that while Matchabelli, Seaforth, and Sofskin were acquired by Vick in the 1940's and proved valuable properties over the years, more than 90 per cent of Vick's business is now concentrated in the drug and closely related fields—ethical drugs, proprietary drugs, veterinary drugs, fine chemicals, and plastics. Vick will re-invest the proceeds of the sale in its acquisition program, which, within the last four months, resulted in acquisitions on Walker Laboratories and The Lavoris Company.

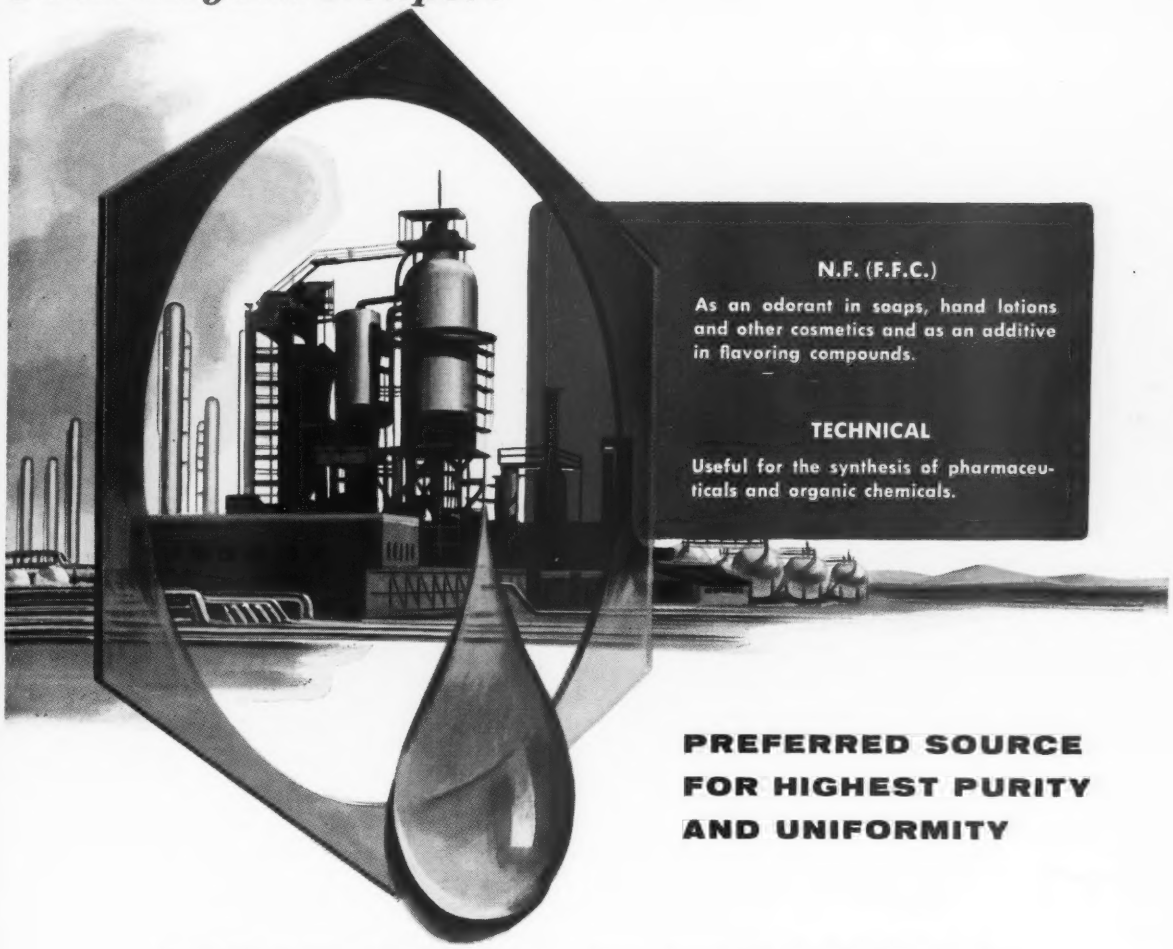
Acquisition of these perfume and cosmetic products is expected to broaden and strengthen the present roster of high quality cosmetics and toilet goods produced and marketed by Chesebrough-Pond's. Prince Matchabelli fragrances will continue to be sold on a selective distribution basis, according to Chesebrough-Pond's president J. A. Straka. Seaforth will join Vaseline brand products in the men's toiletries field, and Sofskin will line up with Pond's products. The acquisition means diversified volume and a stronger potential in department store and drug fields, added Mr. Straka.

Sterling-Winthrop Research Expansion

Ground was broken last month for construction of a new biology wing to the Sterling-Winthrop Research Institute at Rensselaer, N. Y., about one month after completion of another institute structure. The construction is part of a broad expansion program for laboratory facilities and equipment and scientific personnel. First major phases were the erection of a chemical development laboratory, a boilerhouse extension, which were finished in mid-summer. This laboratory is housed in a new building separated from the main research buildings. It is expected to be in full operation by the first of the year, when all equipment will have been installed.

The new biology extension is to be a four-story addition to the present wing, containing 37,696 square feet. One of the four floors is to be devoted to experimental development and pilot production of biological materials for the treatment of various infectious diseases. It will be an extension of the research activities presently being conducted in the Institute's virus laboratories. Facilities will be available for handling a wide variety of infectious materials such as tissue culture and egg embryos, as well as for the propagation and study of viruses and other infectious agents. Another floor will be devoted to laboratories that provide expanded facilities for pathology, hematology, and endrocrinology studies. The top floor has been set aside for pharmacology work, and the lowest floor is to consist of quarters for laboratory animals and space for ventilating and other equipment.

From Heyden Newport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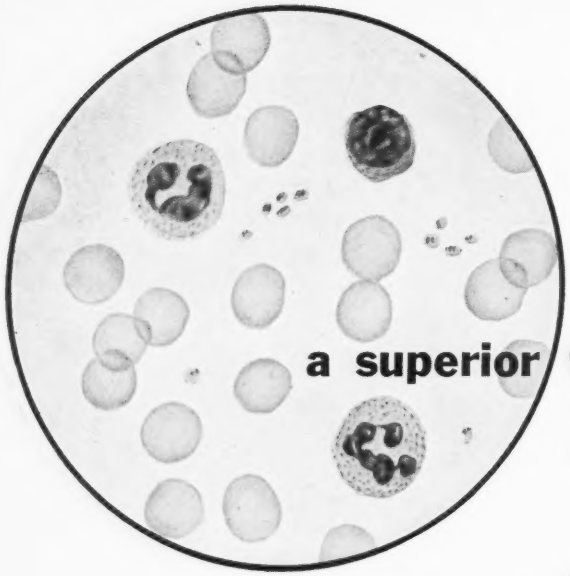

Toleron*

BRAND OF FERROUS FUMARATE

a superior form of ferrous iron

supplied only by Mallinckrodt*

Anhydrous ferrous fumarate is a new standard in iron therapy, which provides a readily available source of iron when used alone or as a constituent of drug preparations.

"... ferrous fumarate is an effective therapeutic agent for treating iron deficiency, and it appears to be well tolerated from the standpoint of gastro-intestinal side effects."[1]

In multivitamin formulations, TOLERON offers stability and compatibility advantages when compared with other iron compounds. It may be tableted employing the usual granulating solutions, fillers, lubricants and disintegrating agents. Uncoated TOLERON tablets are stable and do not possess the marked "iron taste" which characterizes the uncoated tablets of most iron compounds.

DISTINCT ADVANTAGES...

TOLERON IS

stable

well tolerated

compatible with other ingredients

a readily available source of iron

1. Shapleigh, J. B. and Montgomery, Austin: A Clinical Trial of a New Iron Compound, Ferrous Fumarate (to be published).

NOTE: Anhydrous ferrous fumarate is covered by U. S. Patent No. 2,848,366 granted to Mallinckrodt on August 19, 1958.

No new drug application is required when TOLERON is distributed with over-the-counter labeling which recommends it for the prevention or treatment of iron deficiency anemia in dosages which do not exceed 800 mg daily.

* REG. U.S. PAT. OFF.

Write for technical data on TOLERON

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PRESSURE-PACKED PHARMACEUTICALS*

BY EDWIN POMERANTZ, CHARLES PFIZER & CO., INC.

A package, as described by Webster's New Collegiate Dictionary, is something that is packed or prepared in a compact form, and packaging is an integral part of the sales of any product. Sales, of course, means money, which is that green minted material so near and dear to many of us. Therefore, the nicer and more unique the package, the more swimming pools and cars we'll have.

Within recent years, the most unique packaging development has been the self-energized package, or the "aerosol." As a representative of the pharmaceutical industry, I can state without reservation, that there is a definite interest in the aerosol packaging of medicinal products. Recently, this topic has created a rash of articles in many trade journals. In almost all of these articles, the authors theorize that there should be many advantages in pressure-packed pharmaceuticals: I believe I can present sufficient data to convert at least some of these theories into concrete facts.

Pharmaceutical products, like any other article of commerce, are becoming more and more competitive. The more "plus factors" a manufacturer can build into his product, the greater are its chances of dominating the market. Evidence of this competition is shown by the improved flavors of many products. Not too long ago, almost all medicines were associated with poor taste. Many patients, in fact, judged the efficacy of the product by its taste: the worse the taste, the better the medicine.

Today, every pharmaceutical manufacturer attempts to build an appealing taste "plus factor" into his dosage forms. This is particularly true in the pediatric and geriatric fields. In fact, some manufacturers offer geriatric vitamin supplements formulated in a sherry wine vehicle. When the old codger takes a short snort and says it's his medicine, he really means it!

To carry this idea of customer appeal one step further, it must be pointed out that the manufacturer of pharmaceutical products not only has to keep his eye on his competition, but must also be aware of developments in other fields. When the so-called "bug bomb" of World War II was first developed, I doubt if anyone could have seen a direct relation between this innovation and pharmaceuticals, other than perhaps treating a consumer who incinerated the can or sprayed himself in the eye. Recent developments, however, indicate that the "bug bomb" concept could well be one of the most revolutionary that has ever taken place in pharmaceutical packaging. Not only has "push button" application completely won customer appeal as demonstrated by many non-medicinal products, but pressure packaging also offers many advantages to the pharmaceutical formulator not currently found in standard packages.

Many of the problems involved in pharmaceutical research could be eliminated if all active ingredients and base compounds were inherently stable and mutually compatible. Unfortunately, this is not the case. Vitamins such as A and ascorbic acid are adversely affected by atmospheric conditions, such as light and moisture, as well as trace metal contamination. Other vitamins are similar to the notorious Hatfields and McCoys, in that they cannot peacefully reside in the same environment. For example, ascorbic acid will destroy vitamin B_{12}, and excess ferrous ions will destroy both, if steps are not taken to minimize intimate contact between them, or to keep the system anhydrous. Certain antibiotics drastically lose potency when exposed to moisture, particularly if the medium is alkaline. In addition to these, some analgesics and several other compounds are also deleteriously affected by light and moisture.

By its very nature, the aerosol package must exclude most atmospheric contaminants. Due to a positive internal pressure throughout its life, it is impossible for oxygen or moisture from the air to come into contact with the container's contents. If a metal container or an opaque plastic-coated bottle is used, light is also avoided.

In addition to these advantages, with a metered valve a more accurate dose of medicament can be measured. In topical products, an intermediate applicator, such as a brush, swab or fingers, is eliminated, and waste and mess are minimized. Also, pain of application may be reduced, because there is no direct contact between the applicator and the injured tissue. In a burn remedy, this application alone can be a major "plus factor." Using a spray will cover an injured area more efficiently, particularly in hard-to-

*Reprinted from complete paper presented at the 20th Annual National Packaging Forum of the Packaging Institute, Inc.

reach places such as the shoulder blade. A more uniform application over a given area is achieved and possibly the medicaments will penetrate better, though this still requires experimental confirmation.

Perhaps the biggest advantage of all, particularly for proprietary products, is convenience and ease of application. It has already been demonstrated by such products as insecticides and shave creams that the consumer is willing to pay a premium for convenience, and this should be just as true in pharmaceuticals as in any other product.

From a laboratory standpoint, we must concern ourselves with the apparatus needed, and then the finer details for a given product, such as propellents, formulations, valves and containers.

Propellents

From a pharmaceutical standpoint, all of the currently available propellents can be placed in one of two categories. The line of demarkation between these categories is established by known toxicity. These propellents which are known to be nontoxic are the inert gases such as nitrogen, helium, argon, carbon dioxide and nitrous oxide, to name a few. Of these, nitrogen will probably be used more in pharmaceuticals because of its ready availability and low cost. In fact, the term "Nitrosol," referring to nitrogen-propelled aerosols is becoming popular.

The halogenated hydrocarbon propellents (Freon®, Genetron® and Isotron®) have not yet been approved by the U. S. Food and Drug Administration for use in medication taken orally. We have been informed, however, that one (and possibly more) of the propellent manufacturers is investigating nontoxic propellents of this type.

Certainly, a nontoxic halogenated hydrocarbon propellent is of interest to the pharmaceutical industry, but how great its effect would be in oral preparations is questionable. The halogenated hydrocarbon propellents will emulsify or combine with most liquid concentrates, and a foam will be emitted, rather than a desired stream. Most patients most likely prefer a true liquid medication to a foam for oral administration. A propellent of this type, however, can find excellent application in nasal and throat sprays, as well as inhalation therapy.

The nitrogen in Nitrosols acts merely as a piston to force the concentrate out of the container. Because it is inert, there is practically no physical or chemical combination between the nitrogen and the concentrate and the product is dispensed in the same form in which it is filled. In other words, a liquid will be a liquid and not a foam. Many manufacturers may prefer to retain the well-known physical characteristics of their products if they convert from conventional packaging to pressure packaging.

Due to their solubilizing properties, the halogenated hydrocarbon propellents exhibit a major advantage over the inert gases. In certain instances, this could be the deciding factor for the choice of propellent. Other factors influencing the choice of propellent are the desired pressures within the container and the possible loss of propellent due to slight leakage after prolonged storage. The halogenated hydrocarbon propellents retain a liquid reservoir within the aerosol so that the loss of a gram or more is, in most cases, not important. A typical six ounce Nitrosol, however, only contains 0.2 to 0.5 grams of total nitrogen. Even if only a small loss occurs, the package may become inoperable or, at best, a large percent of the product will be retained within the expired container.

Formulations

Each formulation is a separate problem and must be handled as such. Generally speaking, however, any adverse conditions found in a standard package will also be found in aerosols, with one notable exception—the exclusion of atmospheric contaminants such as air, light and moisture, as mentioned previously. Also, the need for suitable preservatives may be less critical since air-borne spores and bacteria cannot reach the product.

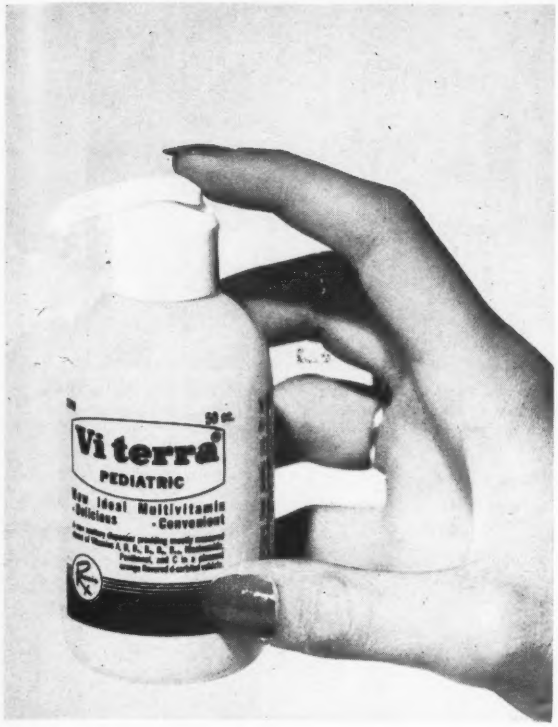
In our laboratory, we prepared several aqueous multivitamin dispersions. Vitamins such as A, D, C and several of the B-complex were included. Half of each preparation was packed as a Nitrosol employing a metal container and the remainder was stored in screw-cap amber bottles having about 1/3 head-space. With the controls in glass containers, there was less chance of trace metal contamination. Representative

TABLE 1
PEDIATRIC MULTIVITAMIN NITROSOL

CONCENTRATE	*Per 0.6 ml.*
Thiamine Hydrochloride, U. S. P.	1.0 mg.
Riboflavin (as the 5' Phosphate Sodium Salt)	1.0 mg.
Niacinamide, U. S. P.	50.0 mg.
Panthenol ..	1.0 mg.
Pyridoxine Hydrochloride, U.S.P.	2.5 mg.
Ascorbic Acid, U.S.P.	40.0 mg.
Vitamin A	5,000 units
Vitamin D	1,000 units
Vitamin B_{12}	1.0 mcg.
Vehicle	*Percent Weight*
Tween® 80*	10.0
Sodium Benzoate, U.S.P.	0.2
Water, q. s. to	100.0
(*Atlas Powder Co., Wilmington, Delaware)	
FILL	
Concentrate	50 ml.
Nitrogen	90 psig.
PACKAGE	
2¼ ounce Peerless Aluminum Can (epon lined)	
Precision Stream Dispensing Valve	

STABILITY	*Potency Retained, based on theoretical*					
	21 days at 45°C.		*42 days at R.T.*		*121 days at R.T.*	
	%		%		%	
Lot I						
Ascorbic Acid	80	(61)	103	(84)	91	(42)
Thiamine HCl	93	(80)	94	(90)	90	(71)
Lot II						
Ascorbic Acid	78	(59)	104	(74)	91	(44)
Thiamine HCl	92	(77)	92	(90)	86	(60)
Lot III						
Ascorbic Acid	79	(66)	99	(80)	93	(52)
Thiamine HCl	87	(80)	92	(88)	83	(77)

(Control results from samples stored in screw-cap, amber bottles having a 1/3 head-space, are in parenthesis.)



samples from all groups were stored at 45°C. and ambient room temperature. Periodic assays were run to determine the stability of ascorbic acid and thiamine hydrochloride. The results of three lots are shown in Table 1.

The Nitrosol package certainly improved the stability of the ascorbic acid after 21 days at 45°C. and 42 and 121 days at room temperature, as compared to the control. Similarly, superior thiamine stability was noted in the Nitrosol at 45°C. and after 121 days storage at room temperature. Trace metal contamination did not appear to be a factor. In this particular experiment, other vitamins such as A and B_{12} did not display the improved stability that was expected.

Since the Aerosol and Nitrosol packaging of medicinal products is still quite new, there is not a great deal of stability data available. In our laboratory, we have evaluated six formulations containing as active ingredients, alone or in combination: vitamins, neomycin, polymyxin and hydrocortisone. Tables 2-6 summarize the stability which was recorded.

In all these formulations, usual vehicle ingredients were used. The results show that pressure packaging with either the halogenated hydrocarbon propellents or nitrogen does not adversely affect the stability of vitamin A in foams or creams, the stability of neomycin and hydrocortisone in the aerosol bandage, or the stability of neomycin, hydrocortisone and polymyxin in foams and creams for the designated periods of time and conditions of storage.

The only one of these products which is decidedly different from anything now on the market is the

TABLE 2
NEOMYCIN AND NEOMYCIN-HYDROCORTISONE AEROSOL BANDAGE
(Original Formula)

	Formula A	*Formula B*
CONCENTRATE		
Neomycin, Micronized (as Sulfate, U.S.P.)	3.5 mg/gm of solids content	3.5 mg/gm of solids content
Hydrocortisone, U.S.P.	—	2.5% of solids content
Vehicle	*Percent Weight*	
PVP/VA (50/50)	16.7 (as solids)	40.0 (as solids)
Carbowax® 600*	1.7	0.4
Ethyl Alcohol, Anhydrous	81.6	59.6
(*Union Carbide Corporation, New York, New York)		
FILL		
Concentrate	30.0	25.0
Propellent 114A/142B (70/30)	70.0	—
Propellent 12/11 (30/70)	—	75.0

PACKAGE
6-ounce Crown Spra-Tainer (Lacquer-lined)
Precision NN Valve with a standard spray actuator

STABILITY	*Potency Retained, based on theoretical*	
Neomycin	*Formula A*	*Formula B*
	%	%
Initial	87	87
2 mo. at 43°C.	109	—
4 mo. at 43°C.	—	101
12 mo. at 43°C.	102	—
15 mo. at R.T.	—	95
Hydrocortisone (Formula "B" only)		
Initial		104
2 mo. at 43°C.		101
15 mo. at R.T.		106

TABLE 3
NEOMYCIN AEROSOL BANDAGE
(Improved Formula)

CONCENTRATE	
Neomycin, Micronized (as Sulfate, U.S.P.)	3.5 mg/gm of solids content
Vehicle	*Percent Weight*
PVP/VA (30/70)	16.7 (as solids)
Citroflex® A-2*	0.8
Ethyl Alcohol, Anhydrous	82.5
(*Chas. Pfizer & Co., Inc., Brooklyn, New York)	
FILL	
Concentrate	30.0
Propellent 12/11 (30/70)	70.0

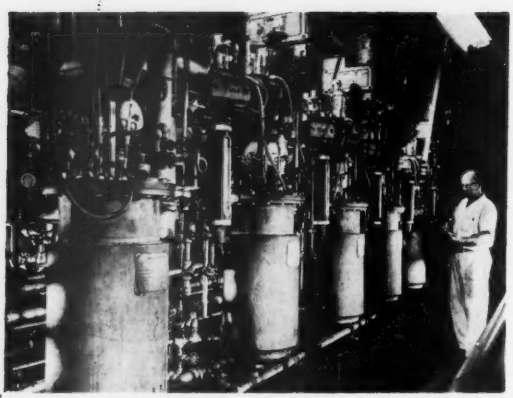
PACKAGE
2¼ ounce Peerless Aluminum Can (epon-lined)
Precision NN valve with a standard spray actuator

NEOMYCIN STABILITY	*Potency Retained, based on theoretical*
	%
Initial	96
1 mo. at 43°C.	98
6 mo. at 43°C.	108
6 mo. at R.T.	100
9 mo. at R.T.	104

neomycin-hydrocortisone aerosol bandage. This preparation is similar to many hair sprays, in that it employs a polyvinyl-pyrrolidone-vinyl acetate copolymer film former, Citroflex® plasticizers, alcohol, propellents, and as active ingredients—hydrocortisone and neomycin. Application of this product to a superficial wound produces a clear, transparent, air- and moisture-permeable film, which permits intimate contact between the injured tissue and the active ingredients. Because of this, the healing process may be expedited. A product of this type should prove of particular value in veterinary medicine and in surgical incisions. If any of you have ever attempted putting a bandage on faithful Rover, I am sure you will welcome this recent advance.

(*Continued on page 516*)

SQUIBB CANCER RESEARCH



Battery of ten-gallon fermentor tanks typical of the equipment to be installed at Squibb's new laboratory for pilot plant production of steroid compounds for the national cancer program and its own research.

Operator examining a fermentor tank of 1,300 gallon capacity of the type to be installed at the Squibb cancer research laboratory, New Brunswick, N. J., for making large quantities of steroid compounds.

Celebrating the beginning of its second hundred years, E. R. Squibb & Sons, a division of Olin Mathieson Chemical Corporation, on September 9, 1958 took additional concrete steps in the field of cancer chemotherapy. Governor Robert B. Meyner of New Jersey, with Dr. Kenneth M. Endicott, chief of the National Cancer Institute, took part in corner-stone laying ceremonies for the new cancer research laboratory; this was a feature of the open-house program marking the 100th anniversary celebration.

The accelerated program in cancer research announced in connection with the celebration indicates anticipated expenditures of nearly $7,000,000 over the next five years—research on the relation of the endocrine system to cancer and pilot plant production and evaluation of steroid compounds on a larger than ever scale.

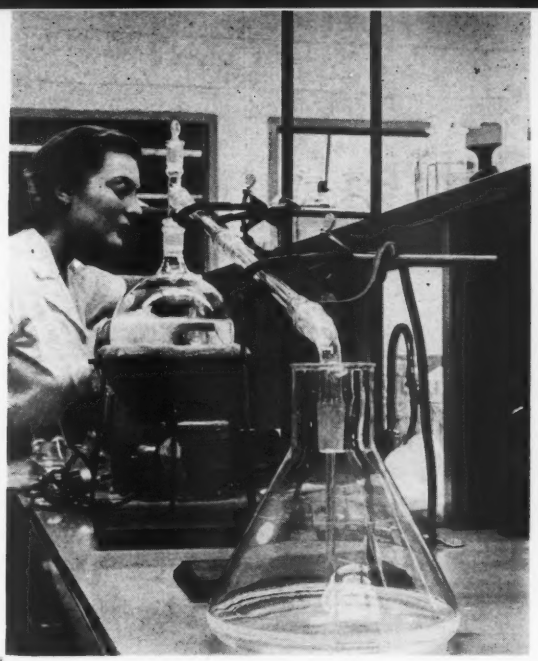
Initial steps in the program include capital expenditure by the pharmaceutical company of $1,525,000 in the next year for new cancer research laboratories and expansion of existing facilities; receipt of $300,000 as a government grant for research in endocrinology and steroid synthesis; expansion of programs to involve $1,000,000 annually for the next five years jointly by Squibb and the Cancer Chemotherapy National Service Center. The endocrine research laboratories are scheduled to be ready in March 1959, while the pilot plant preparative laboratory should be in operation by July. The site of the chemical laboratory will be adjacent to the Squibb Institute for Medical Research in New Brunswick and its staff will be steroid specialists. In broad outlines, the concurrent programs will involve, with respect to endocrinology, the investigation of possible carcinogenic steroids and the development of steroids and other compounds to counteract them; the pilot plant operation will produce new steroids for laboratory investigation and then larger quantities where required for clinical studies. Squibb is of course especially well qualified for research in this field since Fried and Sabo of the Squibb Institute first demonstrated that the preparation of wholly artificial steroids, not found in the body, could produce enhanced hormonal activity, in opposition to the main stream of scientific thought at that time.

The company is involved in other areas of cancer study, not involving steroids, and this part of the program has been under way for more than ten years. In addition, of the half million dollars annually set aside for the company's fellowship and grants program, about 20 per cent is allocated for cancer research.

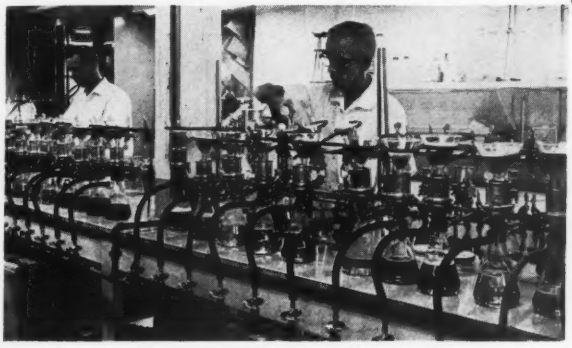
The chemotherapy of cancer began in about 1940 with the use of nitrogen mustards, and research continues in an effort to discover compounds that will do maximum damage to the cancer process and minimum damage to the host. Now involved in the search is the Cancer Chemotherapy National Service Center, a voluntary organization staffed jointly by the sponsoring organizations, namely, the National Cancer Institute, American Cancer Society, Damon Runyan Memorial Fund for Cancer Research, Veterans Administration, Atomic Energy Commission and the Food and Drug Administration. Some 35,000 com-

(*Continued on page 508*)

PFIZER CANCER RESEARCH



Distilling an antibiotic broth to concentrate an antitumor agent that mouse tests have shown to be present. After further concentrations, scientists attempt to purify and identify the exact substance involved.



John L. Davenport, director of the Memorial, checks exposure of cancer cells by high-magnification, time-lapse motion pictures, while Aline Garretson holds a photo-electric cell to the lens of one of the cameras.

Three buildings at Pfizer's Maywood, N. J. research center are now being rebuilt to permit enlargement of the chemical and pharmaceutical firm's cancer research program.

These are the laboratories of the John L. Smith Memorial for Cancer Research, involving an investment of well over a million dollars of Pfizer money. The cancer research program is being conducted in part on contract with the Federal government, under which about $1,200,000 in government funds will be spent during the first year of operations. The work is being done entirely on a cost basis, with no profit to Pfizer. In addition to its initial investment, Pfizer is spending approximately $400,000 a year in operation costs; thus the total sum to be expended on operation alone is just under $2 million.

The director of the project is Pfizer executive John L. Davenport.

The Memorial is screening antibiotic broths for anti-cancer activity, with the cooperation of the Sloan-Kettering Institute for Cancer Research, Southern Research Institute and Hazleton Laboratories. Pfizer, the world's largest producer of antibiotics, brings a wealth of equipment and experience to bear on the new problem. The contract with the government is the largest thus far negotiated with the pharmaceutical industry by NIH's Cancer Chemotherapy National Service Center at Bethesda, Md.

In addition to testing antibiotic filtrates, the Maywood laboratories will study the development of new screening techniques and perform pharmacological studies to determine the safety of compounds for clinical trials.

About 175 new broths per week are tested by Southern Research Institute, and about 25 each by Hazleton and Sloan-Kettering; the total is 11,250 new broths per year. About one to two per cent of these prove to have any activity worth noticing; and of these, many prove to be duplicates of broths previously tested. Out of all these filtrates, the Memorial hopes for six per year that look sufficiently good to go through pharmacological testing and into clinical trial, but there is no guarantee that even one will be found in a given year.

The Memorial begins the search with soil samples sent to Maywood from all over the world. A staff of

(*Continued on page 508*)

Nutrient broths in which soil micro-organisms have been grown are filtered at Pfizer's Smith Memorial for Cancer Research. After these organisms are filtered out, the broths are tested for antitumor activity.

Perfume Formulation

THE JASMIN GROUP

BY J. R. ELLIOTT, PERFUME-FLAVOR CONSULTANT

The jasmin group consists basically of jasmin (in several types), gardenia, honeysuckle, syringa, tuberose and orange flower. Narcissus and jonquille are also classified in this group because of their heavy odor types and their relationship to orange flower.

The flowers of the jasmin group all have one point in common—they are heavy, sweet and inclined to be rather cloying. As single floral fragrances gardenia, jasmin and honeysuckle, in the order named, are most frequently used. Narcissus and jonquille have too depressing and funereal an odor to find much popularity. Syringa, tuberose and orange flower are unfamiliar in America and find little popularity except in cosmetic and powder work, and then under fanciful names.

All members of the jasmin group are used extensively as floral adjuvants in the preparation of other fragrances.

The following series of compositions outline the general design of the types indicated. They are intended to be flexible and may be varied and extended to suit individual situations and preferences.

The various aromatic materials that may be used in the composition of each jasmin-type fragrance are individually listed in the four "purpose" classifications. These materials should be looked up in the accompanying glossary for a detailed description of their odor and utility before studying the compositions.

JASMIN

The fragrance of the French jasmin is unfamiliar to most Americans. There are a few species of jasmin growing in the southern states, but their fragrance differs considerably from the French type. The most widely distributed American flower recalling the jasmin odor is the mock orange also known (inaccurately) as the syringa bush.

The jasmin fragrance is probably the most versatile and useful in the perfumer's repertory. The natural jasmin absolute extracted from flowers imparts an inimitable richness and finish to a fragrance—it is indispensable in fine perfumery. Because of its high cost, a whole series of jasmin absolute synthetic imitations have been necessarily devised for use in lower priced fragrance compositions.

The two types into which jasmin fragrances fall are the so-called "white" jasmin, a flowery, light type based on the benzyl esters and a favorite for "flowering up" colognes and powders; and the much heavier "absolute" type used more as a working base and as a substitute for the expensive natural jasmin absolute. The latter is based on amyl cinnamic aldehyde and the higher benzyl esters often combined with ylang absolute for an extra fine effect.

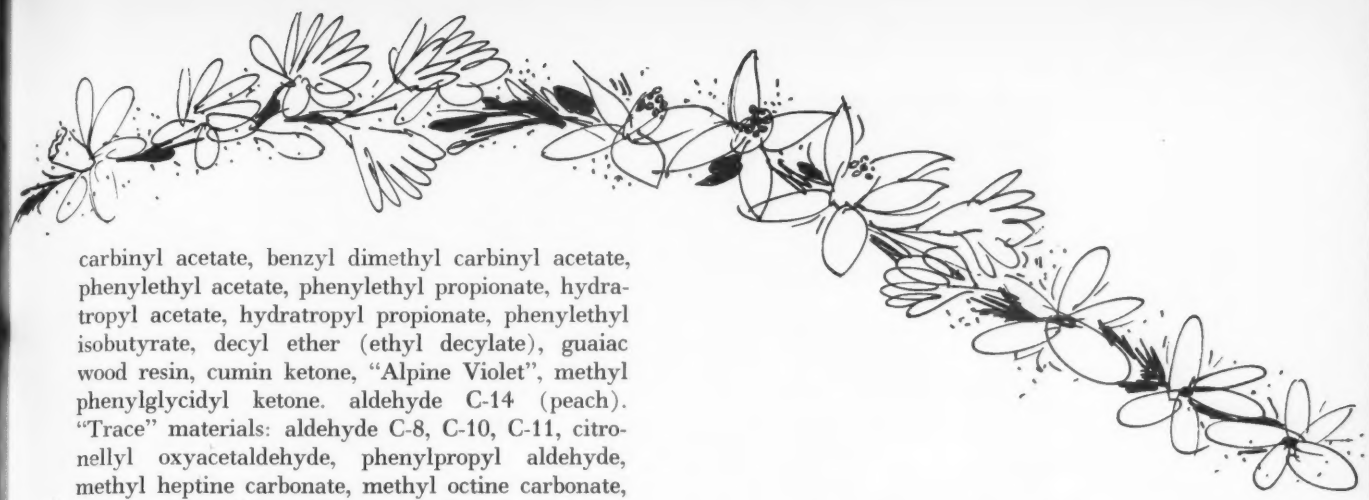
Since the effective materals available for compounding the synthetic jasmins are somewhat limited, the best that can be done is to simulate the jasmin fragrance. The recent development of various jasmin ketones, the series of tolyl esters, and the so-called tetrahydro pyranyl acetate, have somewhat improved the outlook for synthetic jasmin. The following are the "purpose" classifications of the jasmin materials.

Basics

Benzyl acetate, linalool, linalyl acetate, hydratropyl alcohol, amyl cinnamic aldehyde, hydroxycitronellal, phenylethyl alcohol, tolyl acetate, hexyl cinnamic aldehyde, isojasmone.

Blenders

Hexyl salicylate, terpineol, orange Californian, Benzyl alcohol, rhodinol, citronellol, geraniol, octyl isobutyrate, petitgrain oil, benzyl propionate, cinnamic alcohol, cinnamyl acetate, "Glycidiol", benzyl chloroacetate, phenylacetaldehyde dimethyl acetal, phenylethyl dimethyl carbinol, phenylethyl dimethyl



carbinyl acetate, benzyl dimethyl carbinyl acetate, phenylethyl acetate, phenylethyl propionate, hydratropyl acetate, hydratropyl propionate, phenylethyl isobutyrate, decyl ether (ethyl decylate), guaiac wood resin, cumin ketone, "Alpine Violet", methyl phenylglycidyl ketone. aldehyde C-14 (peach). "Trace" materials: aldehyde C-8, C-10, C-11, citronellyl oxyacetaldehyde, phenylpropyl aldehyde, methyl heptine carbonate, methyl octine carbonate, nonyl acetate, allyl cyclohexane propionate, Palatone.

Adjuvants

Ylang absolute, ylang Bourbon extra, oil cananga, benzyl formate, benzyl isovalerate, benzyl butyrate, ethyl salicylate, petitgrain oil, methyl naphthyl ketone, aldehyde C-12 MNA, anisic aldehyde, amyl salicylate, methyl isopropyl acetophenone, para-methyl hydratropic aldehyde, Floralizer #12, ionone, methyl ionone, "Tepyl" acetate, indole, skatole, civet, phenylacetic acid, ethyl phenylacetate. "Trace" materials: tobacco absolute, Genet absolute, oil of celery, oil of chamomile, oil of angelica root, para-cresyl methyl ether, oil of estragon, para-cresyl acetate.

Fixatives

Benzyl salicylate, benzyl phenylacetate, musk ketone, musk xylol, benzoin resinoid, phenylethyl cinnamate.

WHITE JASMIN E.001

120	Benzyl acetate
30	Benzyl propionate
15	Benzyl butyrate
25	Linalyl acetate
50	Hydroxycitronellal
5	Cumin ketone
2	Oil estragon 10% in DEP
10	Ylang bourbon extra
2	Aldehyde C-14 10% in DEP
40	Amyl cinnamic aldehyde
5	Hexyl cinnamic aldehyde
5	Oil of mandarin
5	Hydratropyl alcohol
5	Phenylethyl alcohol
35	Linalool
5	"Tepyl" acetate
10	Para-cresyl acetate 10% in DEP
5	Oil sweet orange Californian
2	Oil myrrh distilled
15	Indole 10% in DEP
3	Benzyl formate
10	Tolyl acetate
14	DEP (diethyl phthalate)
7	Ionone AB
425	

This composition is typical of the "white" jasmin commonly used as an adjuvant in medium-priced fragrances. Since indole often causes discoloration, "white" jasmin cannot be used in soap or cosmetic work. For such work phenylacetic acid is used in the place of indole.

JASMIN FOR COSMETICS AND SOAPS E.002

24	Diethyl phthalate
16	Phenylacetic acid
14	Benzyl iso-eugenol
32	Para-cresyl acetate 10% in DEP
32	Hydroxycitronellal
40	Citronellol
56	Benzyl propionate
55	Linalyl acetate
160	Linalool
560	Benzyl acetate
10	Ylang Bourbon extra
1,000	

This composition is simple, basic and very flexible. It has been used successfully for a number of soap and cosmetic products with complete color safety. It blends well with rose for cosmetic work, and with lilac for the production of a famous soap fragrance.

JASMIN ABSOLUTE TYPE E.003

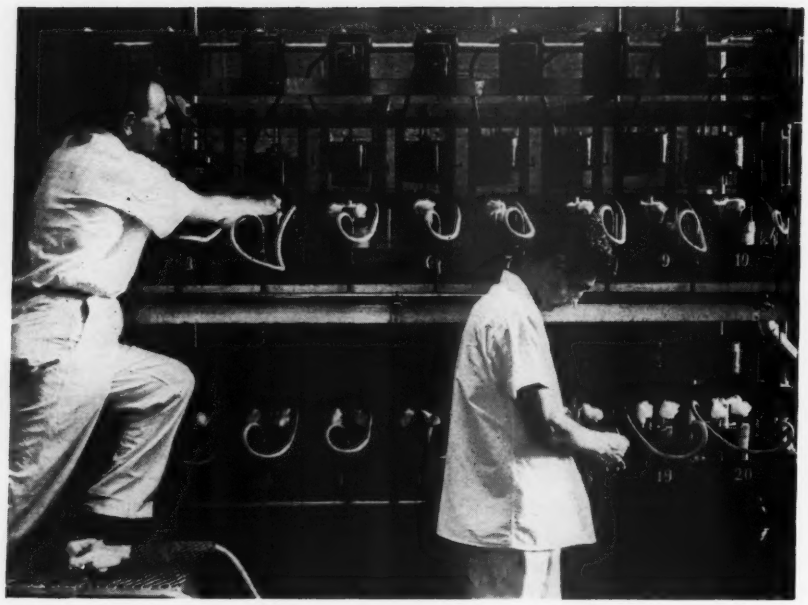
5	Lemon oil Italian
20	Tolyl acetate
1	Oil celery seeds
100	Guaiac wood resin
1	Ethyl phenylacetate
50	Ylang absolute
10	Eugenol
1	Eugenol
40	Indole 10% in DEP
5	Linalool
30	Linalyl acetate
80	Amyl cinnamic aldehyde
10	Hexyl cinnamic aldehyde
50	Phenylethyl alcohol
50	Benzyl acetate
5	Benzyl propionate
5	"Tepyl" acetate
5	Absolute Immortelle 50% in DEP
10	Hydratropyl alcohol
22	Benzyl alcohol
500	

This composition was primarily designed to serve as an extender for the natural absolute of jasmin flowers, since the Immortelle and the indole make it too highly colored for cosmetic or soap work.

GOLDEN JASMIN E.004

6	Para-cresyl acetate
12	Musk xylol
12	Para-cresyl phenylacetate
12	Methyl ionone
18	Oil sweet orange California
18	Oil petitgrain
18	Ethyl decylate
24	Phenylacetic acid
24	"Tetraquinone"

(*Continued on page 524*)



PHARMACEUTICAL FERMENTATIONS, 1957*

BY SAMUEL C. BEESCH AND FRED W. TANNER, JR.
CHAS. PFIZER & CO., BROOKLYN, N. Y.

The fermentation industry is now closely allied with pharmaceuticals. In this field, 1957 was a year of near capacity production and sales, with concomitant economic records. Antibiotics, steroids, vitamins, and organic acids accounted for major production. Dextran as a blood plasma extender is of little current interest, but some new applications of the crude polymer are gaining favor.

Fermentation production of L-glutamic acid is one of the most active fields of investigation in Japan, if one can judge interest by the number of publications. At least one commercial fermentation has been established by the Kyowa Fermentation Industry Co. This is the second commercial use of microorganisms for production of a specific amino acid. Significant interest remains in L-lysine; L-trytophan hasbeen produced in pilot plant quantities by Eli Lilly and Co. and may attain a future commercial status.

The current list of vitamins produced by fermentation, riboflavin and vitamin B_{12}, may in the future also contain β-carotene, long known to be a pigment in certain microorganisms. Research during the current year indicates improved yields. Fermentation β-carotene may some day compete with synthetic and natural forms from higher plants.

New uses for microbial products are being explored. Great emphasis, with governmental financial support, is being placed in the field of anticancer agents. However, the search for new antibiotics and modified steroids continues. Fermentation techniques are being applied to more plant and animal tissues. The close relation between intermediary metabolism of microorganisms and the higher animals has been illustrated again by the many biologically important compounds which are derived from mevalonic acid, first isolated from distiller's solubles.

Plant Expansion and Production

The fermentation industry continues to expand foreign operations while limiting domestic expansion to small increases in capacity. Lepetit S.A., Argentine subsidiary of Le Doga Lepetit (Italy), planned to begin exporting antibiotics and other drugs to Latin American countries.

The 1956 production figures for some fermentation products (Table 1) show an appreciable gain over those of the preceding year. It has been estimated that production of penicillin and the broad spectrum

*Abstracted from **Industrial and Engineering Chemistry**, 50: 1341, September 1958 by the American Chemical Society and reprinted by permission of the copyright owner.

TABLE 1. U. S. Production and Sales of Some Fermentation Products*
(For the first time, tetracycline is listed separately, and steroid products produced by fermentation are included)

Fermentation Product	Year	Production, Lb.	Sales, Lb.	Value, $
Penicillin and salts	1955	455,000	445,000	43,980,000
	1956	631,000	593,000	63,529,000
Streptomycin	1955	154,000	99,000	5,127,000
	1956	130,000	147,000	5,604,000
Dihydrostreptomycin	1955	369,000	332,000	16,318,000
	1956	492,000	431,000	18,198,000
Neomycin and salts	1955	15,000	11,000	5,222,000
	1956	17,000	14,000	5,989,000
All others [includes broad spectrum antibiotics except tetracycline (1956)]	1955	579,000	480,000	171,745,000
	1956	477,000	366,000	105,148,000
Tetracycline	1956	220,000	186,000	72,903,000
Antibiotics for feed supplements, food preservation, crop spraying	1955	520,000	553,000	26,105,000
	1956	779,000	683,000	28,108,000
Total antibiotics for human and veterinary use	1955	1,572,000	1,367,000	242,372,000
	1956	1,967,000	1,737,000	271,371,000
Riboflavin for human, animal, and poultry use†	1955	311,000	218,000	6,414,000
	1956	370,000	245,000	5,321,000
Vitamin B_{12}	1955	488	357	20,614,000
	1956	655	450	22,640,000
Hydrocortisone alcohol and acetate	1956	7,000	4,000	9,552,000
Prednisolone	1956	4,000	1,000	7,455,000

*U. S. Tariff Commission, Wathington, D. C.
†Values for 1955 reported in the 1956 review comprised only riboflavin allocated to human consumption. Present values include animal feed use.

antibiotics was 20 to 30 per cent higher in 1957 than 1956, occasioned in part by the Asian flu epidemic.

The Pharmaceutical Industry Administration Bureau of Mainland China announced that penicillin output reached 9 trillion international units in the first half of 1957, and syntomycin (streptomycin) production totaled 7000 kg. for the same period.

Antibiotics

Production and consumption of antibiotics in 1957 probably attained a new high. Feed uses also increased over the previous year. Hems, while briefly

TABLE 2. New Antibiotics

Name	Type Compound	Producing Organism	Type Activity
Angolamycin	Marcrolide, $C_{50\pm1}H_{80\pm2}O_{18}N$	*Streptomyces eurythemus*	Gram-positive bacteria
Ayfactin	Polyene; UV max. 330, 348, 366, 388, 410 mμ	*S. aureofaciens, S. viridofaciens*	Fungi
Bottromycin (B-mycin)	$C_{38}H_{57-61}N_{7-8}S$; white crystals. Contains new amino acids: α-amino-β-phenylbutyric acid and β-(2-thiazole)-β-alanine	*S. bottropensis*, n. sp.	Gram positive bacteria
Blastmycin	White needle crystals; m.p. 167° C., α^{25}_D + 77.4 (c, 1% methanol) $C_{26}H_{38}N_2O_9$	*S. blastmyceticus*	Some fungi, e.g., *Piricularia* and *Penicillium*. Broth also contains a tetraene
6-Demethylchlortetracycline	Catalytic hydrogenation gives 6-demethyltetracycline	*S. aureofaciens* mutant	Same spectrum as chlortetracycline; more stable
Enniatin B		*Fusarium avenaceum*	*Mycobacterium tuberculosis*
Enteramycin	Acidic, pale yellow crystal	*S. albiraticuli*	Gram positive bacteria
Erythromycin analogs	Me of Me_2N[-]-group replaced by H, C_2H_5-, propyl-, n-butyl-, isobutyl-, γ-phenylpropyl radicals		Reduced activity; ethyl-nor-erythromycin about 1/5 as active as erythromycin
Granaticin	Litmus-like compound $C_{22}H_{20}O_{10}$, a tricyclic tetrahydroxyquinone dicarboxylic acid	*S. olivaceus*	
Kanamycin	$C_{18}H_{36}N_4O_{11}$ base. Acid hydrolysis yields desoxystreptamine (as from neomycin). Probably contains 2 aminosugar moieties glycosidically linked to desoxystreptamine	*Streptomyces* sp.	Spectrum same as streptomycin. Active *vs.* streptomycin-resistant *E. coli*. Slow resistance development
Mitromycin A, B	A: m.p. 159°–161° C., red-violet B: m.p. 182°–4° C., violet	*S. caespitoseus*, n. sp.	Gram positive and negative bacteria; Ehrlich carcinoma, Yoshida sarcoma; toxic for mice
Pimaricin	Tetraene $C_{30-32}H_{45-53}NO_{13}$	*S. natalensis*, n. sp.	Fungi
Plicacetin	Amicetin minus α-methylserine $C_{28}H_{40}N_6O_9$; analog of amicetin with one less $—CH_2$ group in glycosidic portion	*S. plicatus*	More active *vs. E. coli* than amicetin. Less active than amicetin *vs. M. tuberculosis* H37Rv
Bamicetin			
Amicetin			
Pulvilloric acid		*Penicillium pulsilorum*	Fungi
Pyridomycin	$C_{26-27}H_{32}N_4O_8$; m.p. 221–2° C.; α^{26}_D 90.3 (c, 1% $CHCl_3$); acid hydrolysis yields 3-hydroxypicolinic acid, threonine. Alkaline hydrolysis yields 3-hydroxypicolinic acid, β-picoline, glycine, 2-ethylmalic acid		
Telomycin	Polypeptide	*Streptomyces* sp.	Gram positive bacteria
Wortmannin		*P. wortmanni*	Certain fungi
PA 114		*S. olivaceus*	Gram positive bacteria, Mycobacterium
PA-150	Amphoteric heptaene $C_{54}H_{82}NO_{18}$	*Streptomyces* sp.	Fungi
PA-153	Amphoteric pentaene $C_{37}H_{61}NO_{14}$	*Streptomyces* sp.	Fungi
PA-166	Amphoteric tetraene $C_{35}H_{53}NO_{14}$	*Streptomyces* sp.	Fungi
1-81d-1S	$C_{28}H_{63-65}NO_{12}$; UV max. 224, 284 mμ	*S. albus*	Certain bacteria, fungi
Unnamed polyene	UV max. 305, 317, 333, 350 mμ	*S. effluvius*, n. sp.	Fungi, amoeba
Flavensomycin	Contains N, carbohydrate; no S. UV max. = 251; pale yellow crystals, m.p. 251° ± 2° C.	*S. tanaschiensis*	Fungi, insects

(*Continued on page 538*)

ON REVIVING ACIDOPHILIS AND BULGARICUS THERAPY

BY ARTHUR H. BRYAN, ASSOCIATE PROFESSOR, BIOLOGICAL SCIENCE, JACKSONVILLE UNIVERSITY, FLORIDA

While the old order changes, giving place to the new, the converse can be true in both medicine and pharmacy. The first successful method of artificial respiration was probably started by the Greeks in Hippocrates' time and by the patriarchs of Israel, when the physician breathed directly into an asphyxiated child's mouth, forcing an exchange of air in the lungs and thus stimulating normal breathing. Today this method of artificial resuscitation has been revived on drowned, suffocated or still-born children. The method is under consideration in adults, utilizing respiratory tubes, which makes the actual nauseating mouth to mouth contact unnecessary.

During the Boer war in the late nineties, British surgeons learned by experience on the battle field that lung wounds healed best when left alone, when surgical interference was hazardous and results often fatal. In modern war practice, lung wounds are no longer handled surgically, and the results are almost incredible. Today removal of foreign bodies such as shrapnel or bullets from lungs is seldom resorted to. Encapsulation takes place with but little permanent injury resulting.

The wandering nomads of the great Sahara desert of northern Africa had their wounds treated, in the tenth century, by Avicennia, a Mohammedan physician who advocated the direct instillation of molds and fermenting wines into the wounds to prevent infection. Today we include antibiotics obtained from molds and bacteria in the treatment of all infections, but they were first used by the Arabians some 900 years ago.

The ancient Chinese pharmacopeias list hundreds of drugs and medicinal agents, such as ceratum, beeswax, honey, hashish or cannibis indica, oil of chaulmaugra, which are in active use today, in fact, cited in the latest edition of the U. S. Pharmacopeia.

One of the most popular therapies during the roaring twenties was the free use of buttermilk and yeast in the treatment and management of intestinal disorders generally. The implantation of useful microbial growth in the intestinal tract to set up a bacterial antagonism against aerobic and anaerobic acid and gas formers such as the coliforms and the putrefactive proteus groups of intestinal flora gave very encouraging results. Fleischmann's yeast cakes sold like hot cakes for a while, as the many advocates of yeast as a cure-all therapy took it daily mixed in milk or as a paste in warm water. Physiologically the yeast cells fermented the monosaccharides such as dextrose and levulose to ethyl alcohol, $C_2H_3(OH)_2$ in the gastro-intestinal tract — a process which showed doubtful prophylactic or therapeutic value on careful analysis. However, we still use yeast for its microbial antagonistic action in the alimentary canal, only we take it unknowingly in a more pleasant and palatable form in popular beverages known as beer and ale.

Buttermilk has long been recommended in the prophylaxis and treatment of gastro-intestinal disorders generally, in gastric and duodenal ulcers, hyperchlorhidria, gastritis, dyspepsia, and in the bacillary dysenteries of food poisoning. Yogurt, a cheese-like product obtained from fermenting milk, is used extensively in European diets to manage or prevent disorders of the intestinal tract, again by implantation of useful fermentative organisms.

The Case of the Roumanian and Bulgarian Farmers

Back in the twenties, research workers began investigating Bulgarian and Roumanian farmers, who were reputed to be entirely free from gastro-intestinal disorders with the consequent incredible longevity. These hardy, healthy farmers and their families used milk products extensively in their daily diet, including a buttermilk with some new microbial flora, found, for instance, in cottage cheese, curds and whey and yogurt. Medical bacteriologists and microbiologists, on examining these milk food products, found two new organisms which appeared to dominate the bacterial flora, namely the *Lactobacillus acidophilus* and the *Lactobacillus bulgaricus*. These two microorganisms when cultured particularly in milk media, grew luxuriantly, with enzymic action similar to the flat sours (*Bacillus acidi lactici*). They brought about a curdling similar to that found in ordinary buttermilk.

With the increasing experimental use of cultures

of these two organisms came abundant clinical evidence backed by extensive laboratory findings, that the best microbiological therapy and prophylaxis in the control of most gastro-intestinal disorders utilized cultures of these two increasingly famous organisms. Because *acidophilus* and *bulgaricus* can be easily cultivated in whole, homogenized, pasteurized, reconstituted dry or condensed milk, the therapy became very popular. Dairies all over the country began deliveries of *acidophilus* and *bulgaricus* cultured right on the doorstep, just as buttermilk is today.

However, the premium prices charged for this specially cultured milk seemed prohibitive at the time, and as the fickle public began looking around for something new and exciting in the drug world, the practice was gradually discontinued, in spite of the undisputed and invaluable therapeutic benefits of *acidolphilus-bulgaricus* in G. I. diseases. Today, with tensions mounting as a result of cold wars, inflation, recession in business, and integration issues, statistical data shows that hypertensive conditions, psychosomatic disorders, hyperacidity, dyspepsias and diarrheas are on the increase. Perhaps we need to revive or at least review the role of *acidophilus* and *bulgaricus* therapy. For a new look at the possibilities of extensive use of these interesting microbes in the interests of public health and welfare, we need modern research techniques to give us some practical data on their value in modern medicine. These two organisms evidently act symbiotically, for they grow together without apparent antagonism in milk media as well as in the alimentary canal.

Culturing Bulgaricus and Acidolphilus

Pure cultures of these organisms can be obtained initially from the Dairy Division of the U. S. Department of Agriculture, Washington, D. C., from the bacteriology or dairy division of local state universities, from pharmaceutical supply houses such as Hynson, Wescott & Dunning of Baltimore, or commercially from some dairy laboratories, and the like. From a practical distribution standpoint, every pharmacy in the U. S. A. and in Canada could keep cultures on hand in their biological refrigerators for public dispensing.

Either or both *bulgaricus* and *acidophilus* can be easily cultured, just as ordinary commercial yeasts are, by mixing with any sterile, liquid milk at regular intervals. In this manner cultures can be kept going indefinitely once they have been started. It should be pointed out, for clarity, that milk bacteria may be classified according to the changes brought about in milk as (a) acid-forming, (b) gas-forming, (c) proteolyzing, (d) alkali-forming and (e) inert. The *Lactobacilus bulgaricus* occurs normally in ensilage and in fermenting milk. The *Lactobacillus acidophilus* is normally present in milk, milk food products, and in the intestines of milk-fed infants, and has gained considerable importance recently in sour milk therapy. Biochemically, both these organisms split lactose-forming acids, which later cause the souring and curdling of milk. They grow best under modified atmospheric conditions, on any milk media such as litmus milk, tryptone glucose extract agar (Difco), at temperatures of from 20° to 30° C. Microscopically, these organisms appear as gram positive, non-motile rods, which are inclined to be long and thin. Their enzymes produce lactic acid, fermenting carbohydrates and polyalcohols, are thermostable and microaerophylic aerobes.

Drug Store Culturing and Sub Culturing

In preparing continuing cultures for daily dispensing or home, use as the media whole pasteurized or sterile milk preferably. However, dry or condensed milk may be used if reconstituted with sterile water to the equivalent of the total solids in whole milk. Next, mix a teaspoonful or so of the pure cultures of *acidophilus* and *bulgaricus* into a pint of milk to be cultured. Incubate by letting stand at room temperature for about 24 hours, when the milk solids will begin to separate. Shake well before dispensing as a therapeutic beverage in half-pint doses or in *quantum suficiat*.

By adding additional sterile milk to the original cultures daily, the cultures can be kept going for some time. To retard further bacterial action after 24 hours of incubation, the cultured milk can be kept in the biological refrigerator, well-stoppered, of course, to prevent contamination.

To summarize the technique, just transfer a few cc. of the culture to sterile milk media, incubate at room temperature for 24 hours, and dispense cooled, or flavored with some fruit extracts if desired. In Europe, as well as in this country, yogurt is dispensed with fruit flavors.

Clinical and Physiological Findings

On the basis of extensive feeding experiments, in-

(*Continued on page 520*)

LIVE PALLET ORDER FILLING

When Thomas Leeming & Co. and Pacquin, Inc. decided to sell their modern plant in Hawthorne and built another new one (86,000 sq. ft.) in Parsippany, New Jersey, many people wondered "How new can you get?", but a comparison of the new and the new new plants proves the wisdom of Robert Clark who designed the plant, specified the equipment and now manages the entire operation.

The employees stayed with the move and the same crew which originally filled orders in the warehouse are still doing the job, but the similarity ends there.

The companies manufacture 26 drug and cosmetic items packaged in jars, bottles, tubes, squeeze bottles and vials. In its previous plant two men filled orders from pallets and accumulated the order on one or more pallets. An average order, usually 50 to 75 pieces required 110 ft. of walking; 250 to 300 orders were shipped per day. The palletized orders were set on the floor adjacent to the shipping dock to await arrival of trucks. The pickers were so busy trying to get the orders filled that no time was left for checking. A check was made when loading the order into the truck and although many errors were caught quite a few errors got by.

Now with the introduction of M-H Standard's new Palletflo gravity racks for pallets and Versarack carton flow racks the walking has been reduced to a short 20 to 30 ft. per order. Orders are not filled till the truck arrives eliminating floor congestion. One checker and one picker are able to fill orders in one half the previous time. Order filling accuracy is at an all time high.

The new routine is as follows: Trucks pick up during 4 hours of the day. The picker and checker have ample time in the morning to fill Palletflo and Versarack for the day's operation. The remainder of their day is spent in the production plant. The lift truck operator who was previously on the floor all day long is now working elsewhere in the plant since orders now flow directly from the racks to the truck by conveyor. After orders are shipped the picker and checker have ample time left over to report to the production department daily to complete their eight hours. Order filling area has been reduced from 9600 sq. ft. to 2800 sq. ft. in addition to completely eliminating the area for temporary storage of palletized orders. Mr. Clark estimates his system will pay for itself in two years.

Operator returning empty pallet to the rear of a rack by easy operation of a lever. This feature eliminates handling of heavy pallets, increases safety and permits a narrow picking aisle.

This installation has the following outstanding features:

(1) No power. No dollies or other auxiliary equipment for the pallets to ride on. Pallets ride down at a controlled speed of between 10-20 ft/min. regardless of split, broken and warped boards and protruding nails.

(2) Pickers do not handle pallets. With Palletflo, an easy lever operated mechanism returns empty to the rear of the rack with no effort or handling on the part of the operator, hence more safely.

(3) No truck traffic in picking aisle. All loading of Palletflo and removal of empty pallets is done at the

The Palletflo is rapidly loaded from the rear. The same truck operator also removes the empty pallets, which can be seen in the foreground to the left of the photograph.

The order picking front of Versarack, showing the compact orderly arrangement of the cartons. Notice the freedom from uprights. Filling orders in this way takes half the usual time.

A picker, working in a convenient narrow aisle, is able to select from the Palletflo on the right and the Versarack on the left. Walking is considerably reduced by this method.

One of two banks of Palletflo racks for order picking directly from pallets. The system is ideal for popular items, which are usually ordered in quantities of three or more cases.

rear—simplifying traffic.

(4) Narrow picking aisle. Just enough room for walking and a take-away conveyor. This reduces work and time of picker and also permits placing carton gravity flow racks (Versaracks) on the other side of the conveyor as shown in the photo.

Palletflo's usefulness does not stop at order picking. Several installations now under consideration for others are for:

(1) First-in, first-out palletized inventory.

(2) Holding of palletized orders, waiting for truck pickup. One rack lane per order or per truck.

(3) Automatic order filling. By the addition of controls and handling equipment to and from Palletflo a high degree of warehouse mechanization is possible. M-H Standard has several combinations of controls and handling equipment available.

To our knowledge this is the first pallet flow rack operating on the gravity principle, requiring no power devices, or auxiliary devices to accompany the pallet during its travel thru the rack. This simplification should bring complete warehouse automation one step closer to reality.

Another side light on this story is the fact that three basic order filling problems were solved by the use of three types of gravity flow racks: (1) single item and broken case picking (M-H Slide racks were furnished); (2) single or several case picking (Versarack carton flow racks were furnished); and (3) multiple case picking (Palletflo was furnished).

THE DOCTOR AND THE DRUG MAKER*

BY DOROTHY NOYES, VICE-PRESIDENT AND TREASURER, NOYES & SPROUL, INC.

At the Yale Medical Center I was conducted to the area where the medical school faculty and hospital staff members receive their mail. My guide made a silent gesture in the direction a king-size wastebasket —the kind they have in newspaper offices. It was filled to the gunwales with the deathless prose of our industry. And it is emptied, I was informed, at very frequent intervals. One of our Cornell consultants mentioned his postman in a Long Island community who asked whether he should "bother" to bring around the third class mail. Seems "a number" of doctors in the area had given across-the-board instructions to the postal authorities to throw out all such.

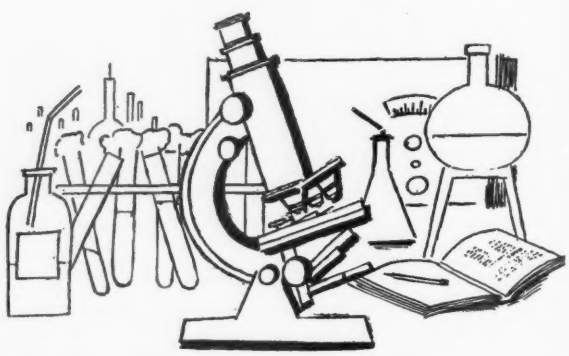
But it is not quantity alone that irks our medical friends. Too often, they say, our pieces are too product-oriented rather than practice-oriented. The product name stands out in big, bright letters, but they look in vain for its mode of action. "Why don't they tell us what its action is?" asked one physician. "We want to know more than merely what it's good for. Even our patients may know *that*."

We have, they claim, over-promoted antibiotics until patients *demand* them for uncomplicated virus infections, with the result that resistant strains of staphylococci are now a major hospital and public health problem and physicians and nursing personnel themselves are becoming carriers of these strains.

We map out crash programs for catapulting a new product into the big time in 60 days or 90 days—which is overcoming the time lag between research and clinical use to be sure. But if the product falters, we dump it. Why, ask the doctors, must a drug of real merit but limited application be consigned to oblivion, while others that are chemically identical flourish like the green bay tree?

Now it's easy to point out that such practices are side effects of a highly competitive situation. Whatever abuses may arise are small beside the benefits that accrue from the spending of 130 million dollars a year for research. What other industry plows back half its profits into new plants and laboratories, or plays such long shots to develop products which, when successful, may still have a short life before being superseded?

Another gripe from physicians concerns samples. Most of our contacts were loud in lamenting the mil-



lions of dollars spent by manufacturers in deluging their offices with what they consider small ineffectual amounts of drugs which they feel serve no useful purpose. My personal physician—one of New Haven's top internists highly regarded as a teacher and practitioner—instructs his nurses and secretaries to discard all samples, unopened, willy-nilly. Recently, while one of his gals was doing a hemoglobin reading on me, she showed me a huge basket heaped with samples to be picked up by the janitor. Not knowing what business I'm in, she yacked loudly and long about this terrific waste and the fabulous profits of an industry which continued to mail such expensive un-

*Abstracted from address before Seventh Annual Rutgers Pharmaceutical Conference, May 14, 1958.

wanted material. "Why couldn't sampling be discontinued altogether and this money (including the cost of multi-colored artwork, too, she said) be used to reduce the price we have to pay for medicines?" she asked rhetorically. I've no doubt that many of this busy doctor's patients hear the same wail from this able nurse. You'll admit this isn't good.

Many of those we probed feel there's a definite place for *selective sampling*. They favor a trial supply that's adequate for a real test in a patient or two—not the customary two- or three-dose sample which they feel is so economically unsound because its trial-value is zero.

First we might remind ourselves that physicians, on the average, devote only 32 minutes a day to our silver- tongued messages. Thirty-two minutes for seeing detail men, reading journal ads and direct mail, and perusing house organs and medical newspapers.

Here is what a professor of medicine told me. "Don't forget that a generation of young doctors is growing up that relies as much on auditory as on visual channels for receiving information. Perhaps more. They learn medicine on ward rounds and in clinical-pathological conferences. Textbooks, so quickly out of date, play a diminishing role. Journal articles they discuss in the journal club. When they enter private practice, this auditory intake continues through the medium of medical staff meetings, departmental conferences, and the give-and-take of teaching on the services."

Another medical teacher said he works on the principle that we remember 15 per cent of what we see and 35 per cent of what we hear.

The project of which I heard most was California State Medical Society's weekly digests of current literature on tape recordings. You all know that the tapes are going great guns in the West, where a house call may mean a 30-mile ride. The doctor plays them in his car. Tapes are spreading to the East, too, finding lodgment in interns' lounges and at the bedsides of busy GP's who like to know what the specialists are doing.

One of our roundtable participants finds himself so overwhelmed by the piling up of printed information that when he wants to know something in a hurry he picks up the phone and calls a colleague who's an expert—anywhere in the country. It's easier to pay for five or ten minutes of conversation, he finds, than to search through the literature.

Not surprisingly, this touched off some brainstorming at our roundtables. Considering the cost of detailing a sometimes reluctant physician, wouldn't a drug company be glad to reach a genuinely receptive doctor for the price of a toll call? Of course a physician in St. Louis might hesitate to call a drug house in Jersey collect. But the company could have a local listing and get the calls switched to the home office. In the unlikely event that no one were available to detail the doctor, the girl at the switchboard could always play a tape. No doubt the ingenious Bell System could even arrange for a physician to get 24-hour-a-day service by dialing a product code number in addition to the telephone number.

By easy stages of free association, our medical panel moved on to a proposal for a Medical Journal of the Air broadcasting to the profession on a special band from, say, twenty cities, a more or less continuous program, with leading clinicians and investigators reporting developments via tape in their fields at scheduled times. Just about the whole panel believed doctors would enjoy tuning in while driving or waiting for the baby to come. Perhaps individual companies could sponsor segments of the program. Granted, it would be expensive.

As you know, more and more leaders of the profession are education-minded, reflecting in this the rapid development of intern and residency postgraduate programs. They feel keenly the *lack of audio-visual teaching materials in many areas*. Rarely does a single hospital command the funds or talent to take full advantage of modern communications techniques. However, the task is not beyond the resources of pharmaceutical companies and their advertising agencies and creative personnel. It could be a source of vast good will. We have many useful teaching films but too few aids for visualizing processes and concepts that don't lend themselves to straight photography.

Would you like to know what a certain professor of obstetrics at Columbia Presbyterian would give his eyeteeth for? A *Disney-style animated movie* showing the mechanism of rotation inside the pelvis during delivery. You can't photograph it. It's difficult to explain what it's all about with gestures and chalk talks. But a Walt Disney, with some obstetrical assistance, could put over this important and hard-to-grasp concept magnificently. Yes, it would cost money—as much as a dozen mailings or so perhaps—but our friend and consultant swears that, whoever does it, the obstetricians of this broad land will call his name blessed.

Much can also be done at a simpler level to meet graduate and undergraduate teaching needs. A study at New York Medical College shows that barely half the students select their field of practice by the end of

(*Continued on page 535*)

AVON STABILIZES BY NEW PROCESS

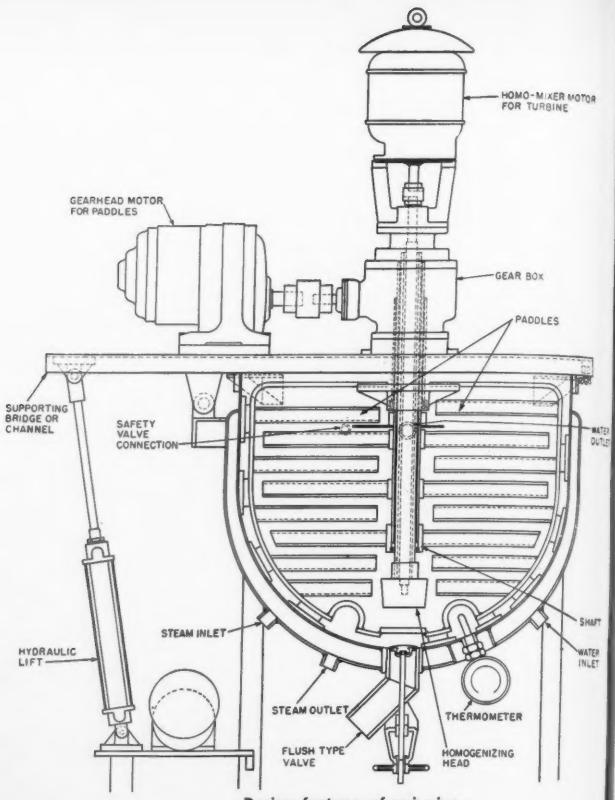
Two complete cosmetic compounding lines consist of one agi-mixer each, served by three pre-mix kettles. One thousand-gallon agi-mixers are installed through floor to simplify transfer of compound to the floor below.

A silky-smooth, fragrant lotion or cream, exactly identical in a million bottles, requires a highly efficient emulsifying process to disperse ingredients. That's why all four of Avon Products' widely separated cosmetic plants today process cosmetic emulsions with dual action homogenizing mixers.

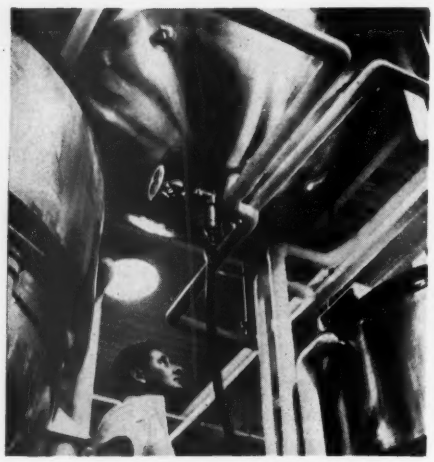
These plants, located at Montreal, Canada; Suffern, N. Y.; Pasadena, Calif.; and Morton Grove, Ill., produce Avon's complete line, and each has packaging and shipping facilities to serve Avon's well-known distribution system of in-the-home sales. The new Morton Grove plant, a model of plant layout, incorporates every improved processing technique developed in the older plants.

At Morton Grove, a key operation is the blending of ingredients used in lotions and cosmetic creams. A typical cream may contain as many as 15 different materials, some liquid, others dry, with a wide range of particle sizes. All have a tendency to agglomerate and some may even resist emulsification.

Therefore, specialized processing equipment must be used to minimize those factors and produce lotions and creams which are not gritty and which have color stability, long shelf life and visual appeal. For this reason, all four Avon plants use Eppenbach agi-mixers made by Gifford-Wood Co., Hudson, N. Y.



Design features of agi-mixer.



Homogenized cosmetic is drawn from agi-mixer to adjacent sweep kettles for viscosity regulation.

Production Is Two-Step Process

Lotions and cosmetic creams are produced by a two-step process consisting first of emulsifying the mixed ingredients and second, regulating the vis-

(Continued on page 514)

Packaging and Selling

Colognes Packaged as a Gift for Two

by Guerlain. One bottle contains the perfumer's Shalimar for the lady of the couple, the other, Extra Dry Cologne for the gentleman. Each contains 3 ounces and has a leak-proof cap, and the pair retail at $8.00 plus tax.

Owens-Illinois Assures You A Complete Packaging Approach

Continuing Research

Pure research into fabrication of glass, *packaging research* into processing and handling methods in customer plants, *market research* into consumer attitudes. All add up to finer packaging.

Engineered Design

At Owens-Illinois, your package's *three* needs are taken into account: 1) Considerations of its function in the retail store, 2) its operating efficiency, and 3) its consumer utility.

The Right Container

Versatility of facilities and talents make O-I your best source of supply. In container development—beauty, utility, tradition are blended in the right proportions for your product's needs.

The Right Closure

Through long and continuing research O-I has developed the most advanced metal and plastic closures. Helping you choose the right closure is another function of O-I's packaging service.

Needed Fitments

O-I specialists are keenly aware of sales benefits derived from plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and warehouse . . . as well as on your own filling line and in transit.

Metalized closures are another part of O-I's complete packaging service

Give your salespackage this TOUCH OF GOLD ... an O-I metalized closure!

To your customers, a salespackage capped with golden color signifies a *special* product.

That's why a metalized closure—as part of a well-designed package—is a sure way to draw attention to your product ... to express its quality ... to compel sales action.

With all their sales value, metalized closures are but one part of Owens-Illinois' complete packaging service. This service includes virtually every type of metal or plastic closure ... complete selection of stock containers as well as custom designs ... label designs ... special fitments ... merchandising cartons.

Ask your Owens-Illinois representative for complete details on metalized closures or any part of O-I's packaging service. Call him today!

METAL AND PLASTIC CLOSURES
AN (O-I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

CROWN
TAN FROM A CAN
Suntan oil, handily and evenly sprayed from Crown-pioneered Spra-Tainers, adds to fun in the sun. Only Crown makes both the seamless and fabricated types of pressure packages. Crown does the art and lithography, too. Dozens of products—cosmetics, pharmaceuticals, toiletries, paints, insecticides—are brightening their sales outlook through aerosol packaging. Crown can help you find a more prominent place in the sun for your product.
for cans • closures • crowns • machinery
CROWN
CROWN CORK & SEAL COMPANY, INC.
9300 Ashton Road, Philadelphia 36, Pa.

WHY NEW PRODUCTS FAIL

BY FRAZER V. SINCLAIR

Most cosmetic manufacturers are in a constant frenzy of product creation. There seems always to be a mad rush to fill retail pipe lines with a steady stream of new products, conceived in haste with a cynical indifference to any merit which would justify their existence, packaged in superficial elegance and promoted in a tempest to meet the obligations of another year.

Everyone admits that this condition is uneconomical, confusing and misleading to the consumer, bad for the retailer, a strain and a burden on the manufacturer. It may be sowing the seeds of distrust in the minds of consumers and retail sales people. Certainly this condition presents an obstacle and a hazard to the healthy growth of the sound cosmetic products that do prove their ability to survive.

In spite of all this, let's hasten to add, the cosmetic industry needs, lives and thrives on a flow of new products. It's an imaginative, creative industry; women and retailers want it that way; new products are the essential way to stimulate constant interest and enthusiasm.

The only trouble is that we need more good products and fewer duds.

In a study of the issues of Beauty Fashion for the last five years, we found announcements of 1,232 new prdoucts. These announcements appeared in the advertising, news or new products pages. A follow-through on these new products showed that a shockingly high percentage failed to continue in commercial existence for two years. Over 85 per cent of these 1,232 new products are not now of any commercial significance.

Why did so high a percentage of these new products fail and fail so quickly? Can the reason for failure be studied and interpreted? Here is the way in which we have analyzed these particular failures—that is, failures to attain a reasonably long product life.

Admittedly there is a lot of room for opinion in the matter. Usually there is more than one reason for failure. We submit this list, not as an exhaustive, scientific survey, but as one which should have some value in product planning.

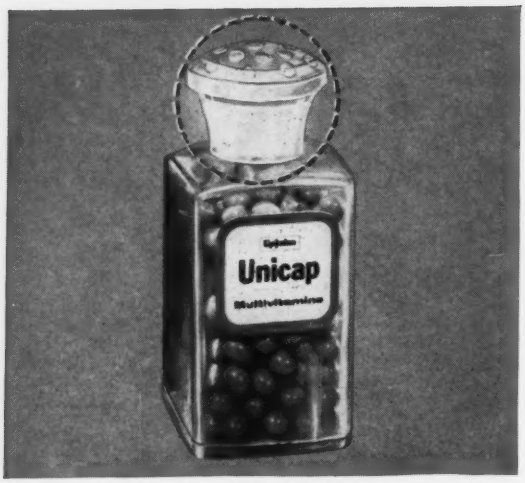
1. *Imitations and duplications.* This classification must lead all the rest by a very wide margin. Our industry is full of bird watchers who spring to attention at the slightest flutter at the point of sale. A vast majority of the unnecessary, unwanted (by retailer or consumer), hastily conceived and packaged products that clutter up the trade must simply be classified as imitation or duplication. The amount of harm these duplications cause in frozen inventories, sales time diverted from profitable staples and time taken away from creative research is substantial.

2. *Gimmicks, gadgets that flopped.* This is a well represented classification. The fertile imaginations of the industry keep a constant flow of gimmicks and gadgets directed at the retail trade. A few are good and last a few years, more are an open question and have their brief days, most are plain silly.

3. *Bad quality.* An inexcusable reason for failure but a frequent one. Some people still believe that good advertising or good promotion will sustain a poor product. The public always disillusions them.

4. *Lack of individuality or personality.* In product, package or theme—something missing. It's amazing how many products are introduced

(*Continued on page 508*)



"CEL-O-SEAL" BANDS HELP SOLVE UNUSUAL PACKAGING PROBLEMS

Here's a striking example of how the unique properties of Du Pont "Cel-O-Seal" cellulose bands can help solve unusual packaging problems.

When the Upjohn Company decided to market its "Unicap" vitamin capsules in a distinctive apothecary jar, it faced the problem of protecting the contents and keeping the stopper securely in place without changing the appearance of the container.

A transparent "Cel-O-Seal" band provided the solution. Applied wet, the neckband shrinks on the bottle neck to provide a seal while overlapping part of the top of the stopper to hold it securely in place. The sealed package enables Upjohn to safeguard product purity, protect retailers against pilferage, and assure consumers of a true count.

By using our Free Packaging Service—as Upjohn and other leading drug manufacturers have done—you can see for yourself how distinctively-styled "Cel-O-Seal" cellulose bands can most effectively complement *your* packaging program, too.

DU PONT
CEL-O-SEAL
REG. U. S. PAT. OFF.
CELLULOSE BANDS

DU PONT
REG. U. S. PAT. OFF.

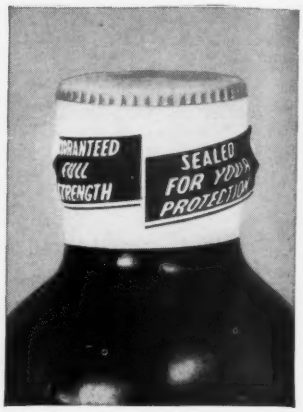
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

"Extras" build acceptance for Purepac...

Beyond the practical and necessary job of preventing lid backoff and tampering, the Purepac Corporation has found that other packaging "extras" offered by "Cel-O-Seal" bands play an important role in building retailer and consumer acceptance for its products.

The company uses the extra labeling space to highlight sanitation, carry other sales messages. An unbroken neckband seal enhances quality, reflects extra care in preparation and packaging. And Purepac reports that the printed bands add a finishing touch to each package.

The decorative and protective *extras* offered by "Cel-O-Seal" bands can help *you* keep pace with today's packaging demands.



Dickinson combines distinctive packaging with protection

For years, E. E. Dickinson's witch hazel packages have combined distinctive packaging with sanitary-sealed protection. And an important feature has been the "Cel-O-Seal" band at the top of each bottle.

Company officials agree that the colorful packaging and seal of protection have become even more important since the trend to self-service selling. Druggists and other retailers profit from better displays, know they don't have to worry about tampering even though products are now handled directly by customers.

In some areas, Dickinson also uses "Cel-O-Seal" bands printed to feature the price at the top of its individual packages.

FREE PACKAGING SERVICE: See how "Cel-O-Seal" Bands can help *your* packaging program. Send us a labeled container. Our packaging specialists will band it, make recommendations, return it for your inspection. No charge, no obligation. Write: E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Bands (A), Wilmington 98, Del. "Cel-O-Seal" Bands are also sold by Armstrong Cork Co., Lancaster, Pa.

AEROSOL VITAMINS

The first liquid multivitamin preparation in a push-button container—the Vi-Daylin Pressure-Pak—is now being marketed by Abbott Laboratories in a newly designed package for the company's familiar nutritional formula for children.

The dispenser is completely new, not only in technical design but in color and styling. Brightly colored pictures and copy on a white background give the container a cheerful, sparkling appearance, and make it an attractive item for kitchen counter or table. An easily removable white plastic cap protects the push-button mechanism.

The package motif is followed in the gaily-patterned six-unit display carton. A schematic diagram on the back of the carton shows how the container operates, enabling pharmacists to answer customer questions readily.

The Pressure-Pak has a new type of valve that works excellently under high pressure. The propellant is nitrogen, an inert gas that provides the required pressure with complete safety.

The liquid flows easily and smoothly from a small spout. The bottom of the container is shaped so that all of the product will be forced up the tubing. A slight sputtering when the button is pressed indicates the dispenser is almost empty.

An important advantage of the new container over pouring from a bottle is less danger of spilling. It also eliminates the "messiness" caused by the removal and replacing of the bottle cap. Accidental dropping will not damage the Pressure-Pak. No refrigeration is required, nor recommended.

When technical problems had been surmounted, Abbott test-marketed the container in sales districts in San Francisco, Memphis, Baltimore, and St. Louis, by means of customer questionnaires placed within the cap of each dispenser. The replies showed a low percentage of complaints and a significant number of new users. Statistics revealed that the colorful styling, the bright counter display carton, and the mention of the new packaging by the pharmacist influenced a substantial number of new purchases.

At present the Pressure-Pak is confined to the 12-ounce size. The 3-ounce, 8-ounce and 16-ounce sizes are packaged as before, although research is under way to determine the feasibility of putting these quantities in pressure containers. There is no change in the product or in its lemon-candy flavor.

"there's gold in them thar hills"

...and we mean sales gold in the new RICHFORD Metaliic Finish

"GOLD NUGGET"

Here is beauty, quality, usefulness plus an iron-hard surface that laughs at scuff-marks, scratches and hard wear.

Available immediately from stock in all sizes of bottle caps in the well-known RICHFORD Flare, Futura and Square shapes and on other shapes to order. Also especially effective on our Exquisite Bottles as shown in standard and spillproof finishes.

Write NOW for samples and prices.

RICHFORD
CORPORATION

Offices and Plant:
3618 Oceanside Rd.
Oceanside, N. Y.

Showrooms:
Empire State Bldg.,
350 5th Ave., N. Y., N. Y.

...glamour in glass!

A world of beauty tailored for Milady

Today, every imaginative woman buys her beauty and health aids tailored to her own personality. In gleaming, snowy opal, or crystal flint, H-A *Private Mold* Containers are imagination in glass—and practical, too. At domestic prices, they add the glamorous prestige of more expensive imports to your products. And permanent "Deco-fired" labels can be economically applied at the time of manufacture. *Give your products a very special appeal*—call or write H-A, right now.

HAZEL-ATLAS GLASS division of CONTINENTAL CAN COMPANY

. . . but we're contributing
to her daintiness and charm

The famous brand of spray cologne, hair spray, tooth paste, antiseptic, car polish, room deodorant, and scores of other aerosol products found in homes all over America were in many instances developed in our research laboratories and private label manufactured by us.

While our name *never* appears on a package, G. Barr & Company's aerosol packaging know-how is the *"hidden ingredient"* that is helping to sell tens of millions of America's leading aerosol products today. Have you heard the G. Barr & Company story? Ask for facts today!

G. BARR & COMPANY

Private Label Aerosols

3601 S. RACINE AVE. CHICAGO 9, ILL.

METI-DERM AEROSOL

Only a few months ago, product manager Theodore Pfeffer, speaking of Schering's new Meti-Derm aerosol, declared: "This is a major development in the field of dermatology; the originality of the package should be reflected in the novelty and uniqueness of the introduction."

These words sparked a promotion and sales campaign that has already resulted in record sales (more than double the most optimistic target), and points toward a continued high plateau.

Idea Hatched

From all reports, Schering's entry into the $400 million aerosol market was born of some thoughtful speculation on the part of researchers Dr. John Yakubik and pharmacist Eric Marx. According to Dr. Yakubik, the use of an aerosol was conceived a year ago as a means of supplying Meti-Derm cream less expensively.

"We tried various forms of the product," he said, "and got five formulations. Then, we sent them to Dr. Hawkins of Clinical Research for testing and study.

"Because the treatment of dermatitis conditions involves topical application of preparations to inflamed sensitive and tender skin, Dr. Hawkins wanted the aerosol to be as dry as possible, and we used isopropyl myristate as the vehicle. Each 150-gram can of the preparation contains 50 mg. of Meticorten. In addition, we noted that the spray-producing solvent, Freon, would exert a cooling effect when applied."

Clinical testing got under way shortly after the first clinical batch of the preparation was produced. It was also made up with talc as a marker, to establish the extent of the areas covered by the spray.

Too Much, Too Soon

When tested, the aerosol package presented the first major problem—the Meti-Derm came out too fast. Studies revealed the spray deposited as much hormone in a minute and a half as is in the 10-gram tube of cream.

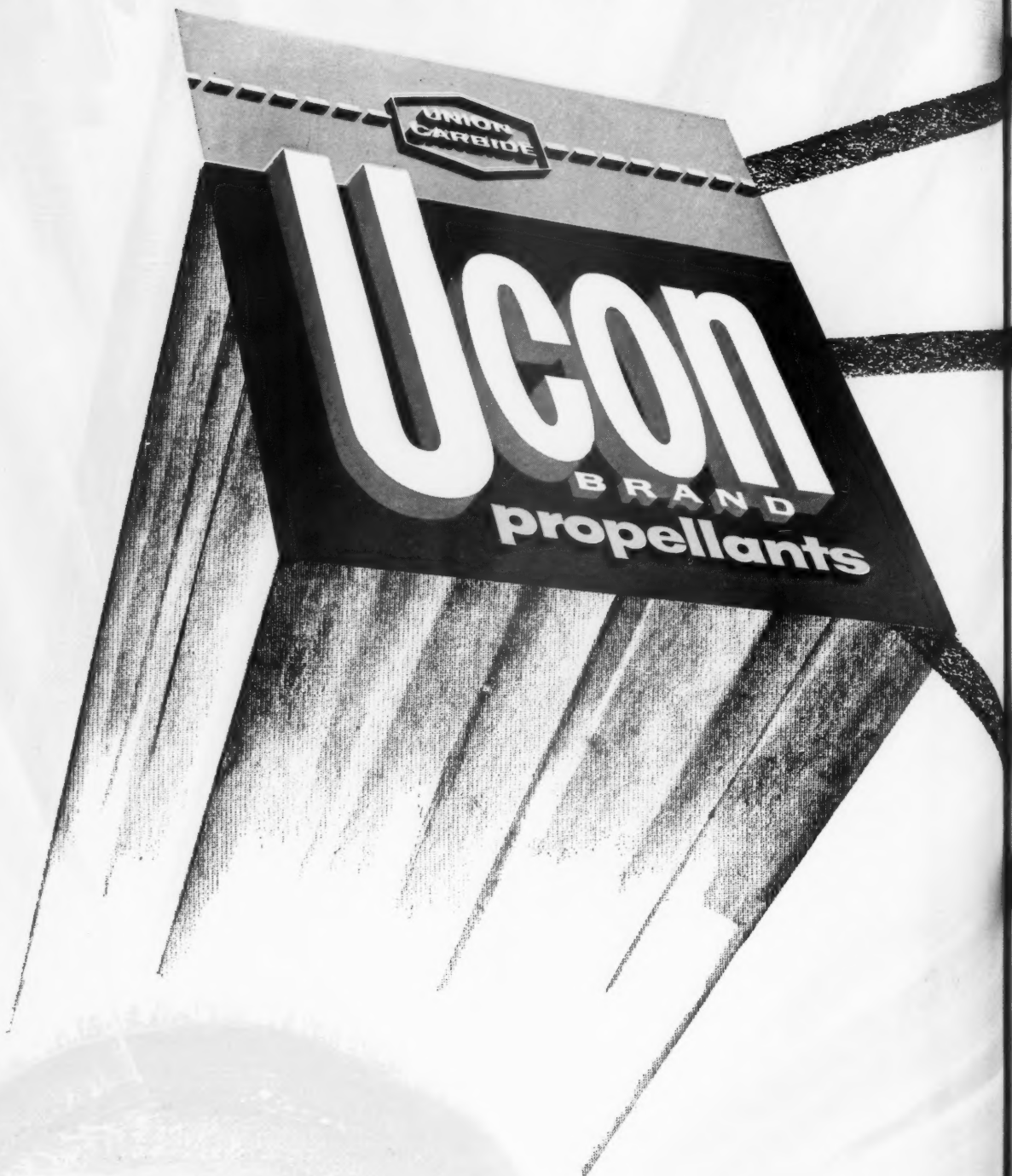
"As a tentative solution," Dr. Yakubik continued, "we decided to increase the total volume, but this did not offer any economy over other dosage forms." Then Hilbert Sorber, a packaging technician who was working on the problem of determining the right size valve of the aerosol container, found that the internal orifice permitted too much of the product to pass through it too quickly, and had the orifice reduced from .080 to .013 mm. The resulting spray lasted four or five minutes.

Now another problem appeared. When experimental studies of spraying particles were made, it was discovered that the average person, despite directions, covered a skin area wider and for a longer time than necessary. Specific directions, a three-second spray at a distance of from four to six inches, led to a cov erage of an area of two by four inches. This would give the patient from four to five times the number of applications previously available from the tube.

Committee Studies Aerosol

With its new, low spray-rate valve and applica-

(Continued on page 522)


UNION CARBIDE
Ucon
BRAND
propellants

Coming soon...

Ucon BRAND propellants

Important News for the Aerosol Industry...

Soon, coming your way, UCON Propellants—in five top quality grades, 11-12-22-113-114, to meet your product specifications for pressure, stability, solubility, safety, and particle size.

With UCON Propellants You Will Get...

Market-Wise Representatives, every one technically trained, to help you choose the best combinations of UCON Propellants for your products. They will assist you, too, with practical advice on selection of containers, valves and equipment—provide useful technical and market data.

Technical Service to help fillers and marketers develop new aerosol product applications, improve present ones. Years of experience in the development and application of emulsions, surface coatings and solvents back up the high quality of the assistance which will be available to you.

Prompt Delivery from a nation-wide network of distribution points... the quantity you want, when you want it.

There will be a right UCON Propellant for practically every aerosol purpose. For more about these products of America's newest plant designed exclusively to produce highest quality fluorocarbons, write UCON Propellants, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 30 East 42nd St., New York 17, N. Y.

"Ucon" and "Union Carbide" are registered trade marks of Union Carbide Corporation.

Ucon BRAND propellants

UCON Propellants will be available in five grades

UCON Propellant 11 Trichloromonofluoromethane
UCON Propellant 12 Dichlorodifluoromethane
UCON Propellant 22 Monochlorodifluoromethane
UCON Propellant 113 Trichlorotrifluoroethane
UCON Propellant 114 Dichlorotetrafluoroethane

UNION CARBIDE CHEMICALS COMPANY *Division of Union Carbide Corporation*

A stock bottle CAN make a distinctive package.
You can prove this to yourself by making
a selection from the extensive Carr-Lowrey
line and letting us decorate it with
your own design. The round bottles
illustrated are our 440, 337
and L-33 styles.
SKIN
FRESHENER
337
L 33
Cologne
4 FLUID OZ
Lanolin
Shampoo
GLASS
STIMULATES
SALES
CARR-LOWREY
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Designers and manufacturers of fine glass containers
Factory and Main Office: BALTIMORE 3, MD. • New York Office: 415 MADISON AVE. • Chicago Office: 1572 MERCHANDISE MART

Dispensing Ease

sells pharmaceuticals

Use Conolene plastic bottles

Each Conolene plastic bottle is a custom-built dispenser for the product it contains—whether it's sprayed, dropped, squeezed, or poured. Your customers appreciate that extra convenience—just as you would.

Customers like the looks of Conolene plastic bottles, too. Conolene bottles come in many note-worthy shapes and eye-pleasing colors that get more attention. And, of course, Conolene bottles are safe. They can't break, even if dropped.

Like to see samples of Conolene plastic bottles? Call Continental today.

CONTINENTAL CAN COMPANY

PLASTIC CONTAINER DIVISION

415 Madison Avenue
New York 17, N. Y.

2930 North Ashland Avenue
Chicago 13, Illinois

Your product deserves the best—Conolene plastic bottles

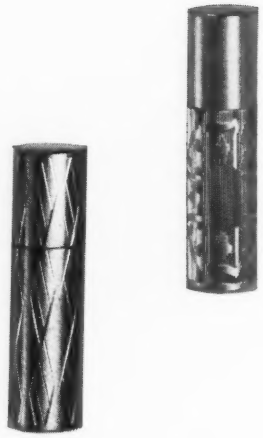
New, Sales-Enchanting
Aerosol Perfume Dispenser

RISDON

"Mini-Mist"™

Refillable Container

Holds 250 to 300 Metered Sprays



Lipstick-size (2⅞" long x ¾" diam.) luxury container refilled by changing fragrance cartridge. ✻

Glamorous outer cases available in gold, silver & black finishes with a wide variety of opulent, machine-engraved patterns or in the elegant simplicity of smooth polished metal. ✻

Inner cartridge holds about 2¼ drams in a seamless tube of aluminum or stainless steel topped by the Risdon patented metering valve and actuator. ✻

RISDON'S "Mini-Mist" is the only purse-size aerosol perfume package with all components manufactured and finished by one company. ✻

Metered Spray, Convenient Size and Corrosion-Proof features make the RISDON "Mini-Mist" ideal for aerosol *PHARMACEUTICALS*, too. ✻

Write or phone for further information, samples and prices.

THE RISDON MANUFACTURING CO. • Naugatuck, Conn.

Quality Lipstick and Perfume Containers
and Aerosol Valves

Packaging and Selling

The American economy this year reached a point where a great many sales managers had to think of ways of holding or increasing sales without yelling for an increased advertising budget. For the first time in quite a few years, a great many of these gentlemen came right up against the blunt fact that they would have to produce sales without having a lot more money to spend in consumer advertising.

For this reason, far more attention is being given this year to the point-of-sale, and it is here that some sales managers are discovering some appalling inefficiencies in their own operation that have meant a great part of their advertising dollars going down the drain while producing very little value along the way. On the other hand, some of these men have awakened to the fact that there are intriguing possibilities for increased sales without an increased pressure on the consumer through the continually increasing expenditure of advertising dollars.

These men have found that in the retail store a feeling of good will and respect for the company and the product, a favorable in-stock position for their product, the assurance of favorable display, or visibility, and the intelligent good will of the sales clerk have opened up heart-warming vistas for new business.

These are all elementary, well-known facts to any sales manager. It just happens that a great many of them, in their hypnotic reliance on consumer advertising, have unhappily forgotten them. However, as we said before, an amazing number are turning in this direction with a plea to be saved.

For instance, just recently M. A. Reilly, vice-president of marketing for Thomas J. Lipton, Inc., said in Sales Management Magazine, "We all know that shelf display can control free movement volume of any particular brand regardless of consumer desire for that brand merely by limiting or relegating a brand to poor display on the shelf."

L. J. Sauers, vice-president for sales of American Home Products, also stated in this article, "Shelf position is the most important single factor in today's modern food retailing."

James McFarland, vice-president and general manager of Grocery Products Division of General Mills, Inc., added this: "A proper shelf position is the most important thing that can happen to a product after leaving the plant and before being taken home by the consumer."

Without in any sense denying the primary and vital necessity in marketing today of visibility and favorable shelf position, we say again that the other in-store factors mentioned above are necessary elements in any well-planned marketing system and are essential for a favorable productiveness in the money spent for consumer advertising.

The big question, of course, is, how can these highly desirable objectives be accomplished?

Product manufacturers have a multitude of ways to make friends with the dealer and influence him toward these decisions. The most important thing, of course, is the manufacturer's own salesmen. Following this is the manufacturer's contact with the retailer and retail sales people through his trade magazines and by direct mail.

Business circles today are filled with a clamor of alarm at what they call the decline in effectiveness of personal selling. There seems to be plenty of evidence that personal selling is not what it used to be, but other points should also be added.

In the first place, many manufacturers have become so fully occupied with consumer advertising and its effectiveness in selling that they have deliber ately and openly relegated their own sales force to a secondary place in sales importance.

Very generally, in the last several years manufacturers have openly declared that they were taking over all of the functions of selling by employing the major force of consumer advertising for pre-selling their merchandise. This is the era in which self-service in the retail store has been widely promoted as the new retail revolution. Is it any wonder that so many salesmen for manufacturers as well as retail sales people have acquired some kind of an inferiority complex?

In the second place, with the enormous increase in the multitude of new products and the magnitude of duplication, many manufacturers have so overloaded the salesmen that they have very little time with the buyer beyond the presentation of the promotion, the gimmick or the new product of the moment.

There are plenty of time studies for salesmen which are filled with nuggets of gold, but very few manufacturers have taken such facts into consideration in properly planning the strategic use of a salesman. Although the salesman has a very limited average time for the undivided attention of the retail buyer, he is loaded with a miscellaneous number of tasks

This new packaging idea created an $85,000,000 market

Here's a simple packaging idea with the power to completely change consumer ideas of how a product should perform. Aerosol packaging created an $85,000,000 market for hair fixatives and has revolutionized sales for insecticides, shave creams, colognes and a host of other products. If your product can be brushed, poured or sprayed, you might add new consumer appeal—create a positive competitive advantage if you packaged it in an aerosol.

Sales records and marketing data prove the appeal of aerosol packaging. In a recent survey of the market for hair preparations, 95% of users preferred the aerosol hair fixative and 83% of users preferred aerosol hair dressings. The main reason for each was that aerosols deliver the product in a completely new form—a form that's easier and neater to apply than similar products in conventional packages.

Put the unique advantages of aerosols to work for your products. It's surprisingly simple and inexpensive to have your formulation packaged for testing. Custom fillers near you have the knowledge and equipment to do it for you.

If you don't know the name of a custom filler, write Du Pont. We'll send you a list and include survey data on your market for hair products plus information about Freon* propellents for aerosols. More of today's successful aerosols are powered with "Freon" than with any other propellent. Write E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division 3410 Wilmington 98, Delaware.

Best-selling aerosols are powered with

FREON® *propellents*

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

*FREON AND COMBINATIONS OF FREON- OR F- WITH NUMERALS ARE DU PONT'S REGISTERED TRADEMARKS FOR ITS FLUORINATED HYDROCARBON PROPELLENTS.

which the most elementary analysis would prove could never be accomplished. Very often salesmen are suppose to present the case for a number of new products, to check on the staples, to submit the details of a new promotion, to make sure that the buyer fully comprehends the company's advertising at the moment, perhaps to take up the details of cooperative advertising, PM's, special deals, to check in the store on display, to talk to the people behind the counter, etc., etc.

It has been proved in a number of surveys that the salesman's day splits up normally into about three equal parts. One-third of his time is spent between calls in getting to the store, another third in waiting for an interview within the store, and the final third is spent with the buyer.

Even this final third is not undiluted sales time, because at least a part of that is spent in preliminary pleasantries before getting down to the actual selling, and also in interruptions.

The specific time that a salesman spends with the buyer and has the buyer's full attention and then finally gets down to business talk amounts to shockingly little time out of the total day and a startlingly brief interval for all of the jobs that he is suppose to accomplish.

It has been definitely proved in marketing research that sales can be increased by increasing the effective selling time that the salesman spends with the buyer. Moreover, it has been shown that there is an increase in sales when the products are actually displayed to the buyer and when a number of ideas, suggestions and promotional help is submitted.

In other words, the salesman who has a few brief minutes with the buyer and who presents a product in conversation may make a certain number of sales. If this salesman is able to gain the buyer's attention sufficiently to display and present the product itself for discussion, sales will increase still further. If this salesman is able to present two or three products and display them with the buyer's attention, there will be a still further sales increase. Furthermore, if the salesman not only visually presents two or three products with information about them, but can also display promotional material, visual sales help, and the like, sales increase further, and substantially.

For these reasons, it would seem that a great deal of additional heavy thought should be given to the strategic handling of salesmen. This means a study of how more profitably to use the salesman's time with the buyer, how to increase the time with the buyer and how to pre-sell for the salesman to the buyer some of the many tasks that he is supposed to perform and so relieve him of this obligation.

For instance, if it has been proved that, when a salesman visually displays a product to a buyer and discusses it, and also discusses the advertising, the promotion, the display material and the sales help, and so on, this means substantially increased sales, it would seem logical to expect the manufacturer to be aggressively and continually supplementing the salesman's call with other means of presenting this material to the buyer, such as through the retail trade press.

The real truth is that probably the poorest advertising today appears in the retail trade press—in spite of the fact that a great many long-established, well-read and highly esteemed retail publications exist in this country.

The retail press, however, has been suffering from three basic troubles. One has been the hypnotic belief held by most agencies and many manufacturers that a sufficient expenditure of advertising dollars in consumer media will eliminate the need for any other form of selling.

The second reason has been that very few advertising agencies have anyone in their organizations with any particular understanding of retail problems or any ability to write effective retail copy. Manufacturers, to their discredit, have not insisted on this service.

A third disadvantage facing the retail press has been its relatively low advertising rate as compared to other media and this, from a commissionable viewpoint, has placed it in the dog house with a high percentage of large agencies.

Nevertheless, the trade press exists as a powerful supplementary instrument which the manufacturer can use to supplement, strengthen and amplify the efforts of his own salesmen.

It does seem as if a great deal of sales thinking is moving in this direction.

Almost anyone would say that $3.00 a box for three cakes was a fairly high price to pay, at retail, for soap. When Roger & Gallet increased to this price early this year, they, too, had questions as to both consumer and retail reaction.

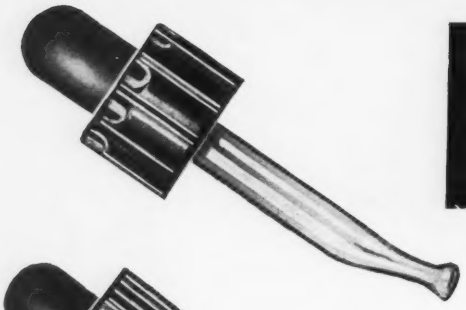
Bob Buckalew, vice-president of Marketing at Roger & Gallet, decided to meet this issue head on so far as the retailers were concerned in a letter expressing precisely why the company found it necessary to establish this new retail price.

The results have far exceeded the company's hopes and expectations. Here is a typical retail letter from an Indiana department store.

"Dear Buck:

Thank you very much for your recent letter in which you made it so plausible that Roger & Gallet was *not* 'pricing itself out of the market' in selling its Soap at $3.00 a box for 3 cakes. You really sold my salesgirls and myself, and you were right. Once we were sold on the factual reasons why it is correct and necessary for your soaps to be priced at $3.00, it became much easier for us to successfully pass this story on to our customers.

"Your slogan *'Tested by Taste—Lasts 4 Times Longer'* is terrific!! *Now*, when we tell our customers



New Perfection

DROPPING PARTS

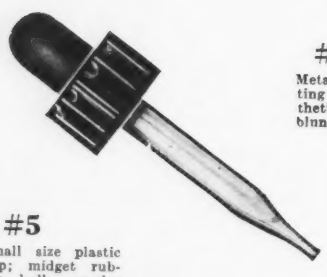
"Repeat-Sale Insurance" for Liquid Preparations

The New Perfection line of functionally designed dropping parts gives satisfaction where satisfaction counts—in the hands of the user. To make sure the customer's first reaction to your product is 100% favorable, specify New Perfection. Our rigid inspection system assures the cleanliness and uniform high quality of every shipment.

New Perfection dropping parts will fit your bottle or can be furnished in combination with our Modernistic bottles in Amber, Blue, Green or Clear glass. Bottle sizes—⅛, ¼, ½, 1 and 2 oz. (Immediate shipment on all sizes and colors).

#1
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; Saftee ball glass.

#3
Regular plastic cap; thin flange rubber bulb; semi-blunt glass.



#4
Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass.

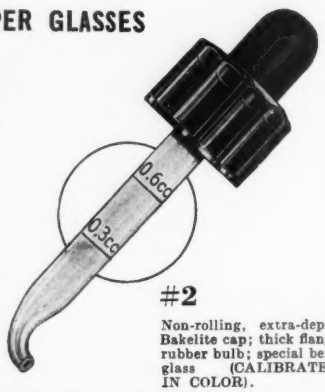
#5
Small size plastic cap; midget rubber bulb; regular straight glass.

NEW PERFECTION DROPPER GLASSES

CALIBRATED

IN COLOR

This inexpensive extra adds welcome convenience to the use of your product. Accurate calibration in any color marks the specific dosage indicated. Your firm name or trade-mark may also be imprinted.



#2
Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED IN COLOR).

Improved bottle shape. Designed to lie flat for convenient labeling. Front provides ample label space.

IN ADDITION to NATURAL RUBBER BULBS for GENERAL USES, WE CAN ALSO SUPPLY

AMEKINE (OIL-RESISTING) Synthetic Rubber Bulbs

which are recommended for use with oil preparations, such as nose and ear drops and vitamin products. Even after long exposure to oil, Amekine closely retains its original shape and functions perfectly.

We can give prompt service on your special requirements for large or small quantities of droppers made from glass or plastic and in special packaging such as cellophane - wrap.

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

that your soap *Lasts 4 Times Longer* than ordinary soap, it is easy to convince them that they are, in effect, paying only 75c ber box for 3 cakes.

"Must admit tho' that we gals had a lot of fun with your slogan *'Tested by Taste'*. We found it amazing that you people have a Soap Chef who actually tastes the Soap as it is being made!

"Thanks again, Buck. We appreciate your help in making it possible for us to sell high-priced quality merchandise with a reasonable rate of turnover. My Boss likes this type of selling. Incidentally, he likes the profit too!!"

And, incidentally, we would say that this new slogan for soap "Tested by Taste"—Last 4 Times Longer" is a home run in quality soap merchandising.

Last April the Borden Co. added Marcelle Cosmetics, Inc. to its growing drug division. This addition of a hypoallergenic cosmetic line was not exactly Borden's first adventure into the cosmetic business because, as we vaguely recall, Elsie the cow some years ago had a slight flirtation in this direction.

Marcelle Cosmetics, a Chicago company, has been detailing doctors for a number of years with over 30 hypoallergenic cosmetics which include skin creams, lipstick, soap, deodorant and hair preparations.

Marcelle detail men have been contacting about 15,000 doctors a year in a program to convince doctors that allergy is really a cosmetic problem. At present Marcelle's distribution is almost entirely in drug stores and is said to include a little over 5,000 of them.

This industry has seen quite a number of hypoallergenic lines come and go, and a number of sales formulas developed with various ways of contacting physicians on an ethical plan similar to the pharmaceutical industry but, to date, none has ever demonstrated any potential over and above a nice, snug little business.

Four-color advertising is the most productive form of advertising and most economical per dollar invested. This is the conclusion of some recent surveys. Reports by the Magazine Advertising Bureau and in Starch surveys show that color outperformed black and white by a considerable margin.

In the Magazine Advertising Bureau tabulation 44 per cent of the linage carried in 83 magazines was in color. Four-color ads accounted for 33 per cent of the total; two-color ads, 11 per cent. Of all color advertising, 76 per cent was in four colors and 24 per cent in two colors.

Starch found in an extensive study in *Life* and the *Saturday Evening Post* that four-color ads get from 50 to 85 per cent higher scores than black-and-white, depending on the size of space.

In a similar study, the advertising agency J. Walter Thompson, in the media department, found that four-color linage had been increasing at the expense of black-and-white.

In a recent newspaper coupon test, General Mills found that black-and-white and three-color ads pulled 79 per cent more returns than a black-and-white only ad.

Black-and-white and one-color pulled 28 per cent more inquiries than a straight black-and-white.

This new idea that a corporate personality is a pretty vital thing in marketing seems to be spreading. We note that the Campbell Soup Company has just taken the name Caroline Campbell to visualize the corporate personality. The portrait selected for Miss Campbell "shows her as a young but mature professional home economist with warmth and enthusiasm."

Of course, we could have no criticism of this because the cosmetic industry was born with the earnest conviction that there must be such a corporate personality. When it comes to ladies' names, this industry is filled with literally thousands of them. In fact, there are a great many that could be acquired for a very small amount.

This new corporate personality is displacing Ann Marshall, used by Campbell since 1949, and Sue Swanson, which they acquired with Swanson products.

We hope this confusion of personalities will have no effect on the soup business. It does seem as if the consistency of Elsie the cow has been creating a somewhat more vivid corporate image.

What is all this talk about poor retail selling? Last year the typical sales person in the average large department store sold $45,000 worth of goods—a record which matched the all-time selling peak of 1956. Furthermore, last year's performance was better than that of 1956, since more sales people were employed in the store to split the sales volume and since 1957 was a more difficult year than 1956.

In addition, the value of the average sale increased 20 cents, from $5.40 to $5.60. The number of transactions increased, but only slightly, 0.5 per cent. Nevertheless, that there was a gain shows that the average sales person was serving more customers in 1957 than in any previous year.

These are all figures taken from the recent study, "Operating Results of Department and Specialty Stores in 1957" from the Harvard Graduate School of Business Administration.

The very newest thing in packing, if you are selling to a supermarket, seems to be to put your product in a can. We have just recently seen the success of alarm clocks sealed in tin cans and now we hear that Modernage Hosiery, a division of Phoenix Hosiery Company, has started packaging nylons in vacuum-sealed cans.

Since this new packaging innovation is partly to

protect the product from a moisture condition, that is, either to exclude moisture or to prevent evaporation, and to preserve the product perfectly from any outside influences including customer handling, as well as to minimize theft in self-service, we would not be a bit shocked if the next time we walked into a supermarket we saw somebody's lipstick in a tin can.

Here are real words of wisdom from a rack jobber to cosmetic manufacturers. We take these remarks from a talk by Irving Feldman, Zelart Drug Company, at a meeting of the Merchandising Executives Club.

One of the chief difficulties that a rack jobber has in distributing toiletries is with the problems involved in pricing. Mr. Feldman pointed to a recent study which found that out of the total time spent in marking prices, two-thirds had to be spent in preparation and only one-third in the actual pricing.

Here are some of the problems that Mr. Feldman cites as the general headaches of a rack jobber.

(1) Occasionally they receive an unmarked carton which does not contain a single word telling what's inside.

(2) Some cartons received are packaged in such a way that it is impossible to price-mark the items without first dumping the contents and then repackaging for shipment.

(3) Many cartons do not contain instructions on how to open for easy price-marking.

(4) Occasionally a product is marked "10c off" on the package. Mr. Feldman wants to know "10c off what?"

(5) Two tubes of the same size toothpaste, each with a different saving marked on the carton.

(6) A trend by shampoo manufacturers to eliminate individual cartons—thus eliminating stacking—and a trend to print the brand name on the cap—eliminating a price-marking spot.

(7) Certain products, notably hair sprays, have caps that are interchangeable with other brands. Since price-marking is generally put on caps, this makes it easy for shoppers to switch caps from a small to a big bottle, or to other products.

(8) Packages with taped-on premium attachments that don't stick and which take up otherwise profitable space.

(9) "Bashful cartons," that is, cartons in which the product is packaged so tightly that it will not come out; or cartons so loosely packaged that the contents fall out when the carton is lifted.

(10) "Shelf space stealers," that is, two new bottles of a product which take up as much space as three old bottles. This particular product, Mr. Feldman commented, has been cut to one facing instead of the three it formerly had.

If a manufacturer uses a completely closed carton, Mr. Feldman thinks it would be a good idea to die-cut holes about the size of a quarter above a blank white space on each package, for easy price marking.

The announcement that Hazel Bishop will use 5,000 television spots each week on 211 television stations gives a sharp, clear-edged definition to this company as a television program rather than a cosmetic company. This is not our definition. We merely pick it up from many previously quoted sources.

The C&C Television Corporation, which recently announced the acquisition of Hazel Bishop, is the first television company to enter the cosmetic industry.

One of the oldest names in this industry, that is Lavoris, will disappear from independent ownership and become part of the Vick organization soon. The report is that after more than a year of negotiations, the plans for taking over this 56-year-old company have been approved by both companies.

This venerable company was established in 1902 in Montreal by Charles E. Leigh, a druggist who originated the mouthwash, and William Levings, who was then an officer in a Minneapolis public utility.

Lavoris was introduced in a small, single room by Mr. Leigh and one employee, and the first sales effort was detailing and selling the mouthwash directly to dentists and physicians.

During the period of substantial growth the Lavoris Company operated without salesmen or sales agents and with limited advertising. As an indication of the company's value, it is reported that Vick will issue stock with a current market value of more than $13,000,000 for the transfer.

We have just received the Brand Inventory Survey in the Homes of Iowa Des Moines Sunday Register. This is the annual survey for 1958 and contains a division on drugs and cosmetics.

Among the news reports from the cosmetic shows we hear that the new aerosol toilet soap that is being introduced by Angelique is arousing a good deal of retail interest. According to Charles Granville, president of Angelique, it is exceeding all expectations.

It is a fact that the fine toilet soap business of the cosmetic industry and particularly of the perfume people, which has been concentrated primarily in department stores, has been almost entirely a business in the traditional form of soap, that is, the cake.

A toilet soap in paste form which can be dispensed by aerosol has certain obvious advantages, namely, cleanliness of application and a definite measured amount for each application—obvious advantages for such situations as traveling.

It is very interesting, amid all this excitement in finding new applications for aerosols, in which the big soap companies are participating either in toothpaste, shaving cream or other products, that it happened to be a perfume company who first gave the retail trade an opportunity for enthusiasm about this new way of applying toilet soap.

Aerosol Product Ideas for You!

Are you interested in aerosol pharmaceuticals, cosmetics and toiletries? Cosmetics are the leading sales producers right now and pharmaceuticals will probably make the next big break-through in aerosol marketing. Or are you interested in aerosol household products, whose sales continue to boom?

If so, you'll want the helpful *Product Information Bulletins* prepared by our "Genetron" Aerosol Technical Service Laboratory on many new as well as established products.

They're free. They contain such basic information as: typical aerosol formulations . . . application methods . . . advantages offered by the proposed aerosol product . . . packaging suggestions . . . data on stability, flammability, pressures, etc. . . . competitive products.

The bulletins presently available are listed for your convenience in the coupon at right. Others are continually being prepared, and we will be glad to send them to you if you would like to be put on our mailing list.

One of these product suggestions may be just what you've been looking for to help you tap the dynamic aerosol market! So check the coupon for the bulletins you want and mail it *now!*

genetron®
AEROSOL PROPELLANTS

Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

"Genetron" Department
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL CORPORATION
40 Rector Street, New York 6, N. Y.

Please send copy of Product Information Bulletins checked.

- ☐ Athlete's Foot Medication
- ☐ Burn Remedy
- ☐ External Analgesics
- ☐ External Personal Deodorants
- ☐ Hair Dressing for Men
- ☐ Hair Shampoo
- ☐ Hand Lotions, Creams
- ☐ Ice Tray Desticker
- ☐ Nasal Relief Spray
- ☐ Neomycin Foam
- ☐ Neomycin Spray
- ☐ New Hair Spray
- ☐ Poison Ivy, Oak and Sumac Remedy
- ☐ Run Stopper
- ☐ Sarcoptic Mange Spray
- ☐ Spray-on Protective Film
- ☐ Suntan Lotions
- ☐ Wall Cleaner
- ☐ White Shoe Polish
- ☐ Household Aerosol Products (includes such popular products as room deodorants, oven cleaner, glass cleaner, disinfectant, mildew proofer, wax polish, water repellent, etc.)

☐ Please add my name to your Product Bulletin mailing list.

Name_____

Title_____

Company_____

Address_____

DC-108

City_____ Zone____ State_____

News in Packaging . . .

Baillie Joins National Can

William S. Baillie has joined the sales department of National Can Corporation in the Baltimore district, W. Howard Winters, marketing manager, has announced. Mr. Baillie had been a sales representative in packaging for Cryovac Company before his new appointment.

Fauth Named Chief Engineer

Frederick E. Fauth has been named chief engineer of the Machinery Division, Crown Cork & Seal Company, Inc., according to Lowell H. Smith, the division's general manager.

Mr. Fauth began with Crown in 1938 as a draftsman in the engineering department, and was made chief engineer of packaging machinery in 1955. His new headquarters will be in the firm's Baltimore location.

New Packaging Superintendent

Harold G. Rounds has been named superintendent of the packaging department at Norwich Pharmacal Company, according to Thomas J. Eaton, director of production. Mr. Rounds has been with Norwich since 1939.

Standard and Eastern to Merge

R. Carl Chandler, chairman of the board, Standard Packaging Corporation of New York, has announced the stockholders' approval of a merger of Standard with Eastern Corporation, Maine, pulp and fine papers manufacturer.

Glamour Spray, new hair straightener and water repellent in an aerosol container for the Negro market, by Marla Ann Products Company, St. Louis. According to the manufacturer, a single, spray-on application achieves what has formerly required involved methods.

Hyme Named by Anchor Hocking

Paul J. Hyme has been appointed director of personnel and safety for Anchor Hocking Glass Corporation, according to J. M. Collins, director of industrial relations. Mr. Hyme has been with the firm since 1942.

Armstrong Designs New Cap

V. A. Game, manager of Metal and Molded Cap Sales of the Armstrong Cork Company's Glass and Closure Division, has announced a newly designed metal cap. The improved cap has a tightly rolled, kink-free bead; a deep, smooth thread for snug thread-to-glass contact along the entire length of the thread; a fine knurl resistant to chipping in hoppering; and a smooth, gentle fadeout.

Dow Plastics Dept. Changes

Appointment of G. J. Williams to succeed Donald L. Gibb as sales manager of the Dow Chemical Company's plastics department has been announced by Donald K. Ballman, director of sales.

Mr. Gibb joined Dow in 1923. He will continue his association with the company's sales department, assuming new duties as special consultant primarily in plastics. Mr. Williams, who has been Mr. Gibb's assistant since 1956, joined Dow in 1948.

Aerosol Techniques Expands

Completion of the expansion and relocation of the executive headquarters and research and development laboratories of Aerosol Techniques, Inc., has been announced by H. R. Shepherd, president.

The additions bring the company's main operational area to 90,000 square feet; they include a new aerosol pharmaceutical manufacturing division and make individual laboratory space available to the company's 15 chemists, along with a "walk-in" aging room and extensive library facilities.

Fred Presant, director of research and development, is responsible for designing the new facilities in conjunction with consultants. The pharmaceutical manufacturing unit is to be headed by Norbert G. Smith, director of production and engineering for the company.

Pacquins hand cream, now packaged in a purse-sized tube of white with red and gold trim, to retail at 39 cents. The display pack contains 12 tubes in an attention-getting carton.

Crown Relocates Closure Facilities

Crown Cork & Seal Company, Inc., has announced that the modernization and relocation of its closure manufacturing facilities at the Baltimore plant is ahead of schedule. When completed, Crown will produce in one square foot of operating space what formerly took three square feet. Production is being moved to single-story structures, while normal schedules are maintained.

Two New Aerosols

To provide improved patient care, the Surgical Products Division of American Cyanamid Company is packaging sterile two new products, Surgaire, a topical deodorant, and Topasil, a silicone skin protectant, in aerosol spray containers.

Surgaire suppresses odors from surgical wounds, and Topasil seals the skin from irritations due to abrasion and fluids.

Bathe'n Glow, Spray Mist bath oil by the Hubere Division, Trylon Products Corporation, with a unique feature—the spray feels warm as it touches the skin. A skin lubricator with delicate floral and pine scent, the 7-ounce aerosol, enough for 60 showers, is $3.50.

Exceptional printing makes the difference and makes the sale!

Advanced Printing and Decorating Techniques

Most Complete Line of Rigid Plastic Containers

LERMER plastic rigid containers are:

- Beautiful—printed or decorated up to four colors on crystal clear or transparent and opaque colors
- Economical—with customer re-use value
- Lightweight, shatterproof—with rigid wall for protection
- 1/5 the weight of glass—greatly reducing shipping and packing costs

Write for full color catalog and samples.

LERMER PLASTICS, INC. 502 South Avenue Garwood, New Jersey

PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

With Bernardin · Quality is a **SERIES** of satisfactions

STEEL

A metal closure is made of steel. The die that stamped it out is made of a different steel. The tool that made the die is of a still different steel. Many of the steels come to us ready for use and require only check testing. Others, like the high-carbon, high-chrome steel we require for certain tools, are tempered in our furnaces and hardened to our own standards.

Pictured here, the hardness of a die is being tested. In the background a blank from that die is checked for accuracy.

At Bernardin, nothing is taken for granted. Thus, with steel, as with all production phases, each operation and the product of that operation is under continuous control with one purpose in mind. To produce millions of closures, each of which expresses "Quality" in all the functions required of it.

QUALITY METAL AND PLASTIC CLOSURES BY

BERNARDIN

Bernardin Bottle Cap Co., Evansville, Ind.

ADVERTISING NOTES

BY TED KLEIN, PUBLIC RELATIONS DIRECTOR*

AMA Institute

The second annual American Medical Association Institute was held in Chicago this year on August 27 and 28. A high spot on the program was the informal meeting between the industry and the AMA, held in advance of the regular public relations institute.

Joseph Stetler of the AMA's legal department and Wallace Werble of FDC Reports were the offcial speakers for the session. Things got very interesting when questions were fired from the audience. Attended by more than 60 representatives from the industry, and the leading State and County Medical Societies, the heart-to-heart session was climaxed by an AMA-sponsored dinner.

Stetler explained the role the AMA has in backing or fighting legislation. He feels that, by and large, most of the unfavorable bills in Congress don't get much further than committee hearing before the AMA has the opportunity to testify. He warns that Federal interest will always be active when it comes to health matters, and that the industry had better be prepared to answer Congressional investigations.

Werble, who is himself active in private life as a member of a hospital board of directors, feels that the industry and the AMA should do something about getting its story across to the public. The fact that drugs are expensive should not be denied, says Werble, but rather should be explained on the basis that they are worth every cent they cost. It's high time, according to Werble, that all the partners in the health team—industry, physician and pharmacist—got together to do something for, rather than line up against, an issue.

At the official "Institute" on the following day, Morton Miller, second vice-president of Equitable Life, told how various insurance plans can affect the health of the nation. He said that today more than 700 insurance companies and 200 Blue Cross or Blue Shield plans provide some sort of medical prepayment for almost 123,000,000 Americans. But three out of every ten of our citizens still have no medical or hospital insurance.

In 1957 the various plans paid out about $11,000,000 per day for their subscribers, almost twice the amount paid out in 1953.

Leo Perlis, a speaker on the AMA's panel and director of the AFL-CIO, Community Services Activities, urged greater cooperation between labor and management when it comes to planning for health needs. Perlis stressed that participation, identification (we have to become really a part of it) and experimentation were the keys to finding a better health program than is now available.

Representative Thomas B. Curtis, of the Second District, Webster Groves, Missouri, another panel member, believes that the investigations of the industry by Congress would never have occurred if the true story of the industry had been told often enough at the local level. If organized medicine doesn't like some of the plans being offered by the Government, it is up to the doctors to come forward with plans of their own, Mr. Curtis said.

National Advertising

Public relations men in the pharmaceutical industry are heartened by Pfizer's new institutional ad campaign in top consumer magazines. Using a staggered insertion schedule, Pfizer will place six different ads in a large national publication each week until January 1st. The magazines are: *Saturday Evening Post*, *Harpers*, *Atlantic*, *Time*, *Newsweek*, and *U. S. News & World Report*. By rotating the magazines, they feel that a larger audience will have the opportunity to get the Pfizer message. The company's new slogan, Science for the world's well-being, and Pfizer's institutional message could have no finer way of getting to the consumer than through this excellent series. Incidentally, the copy for the ads is written by Charles Adams, vice-president of MacManus John & Adams, the same man who has created the Cadillac ads for years.

Which Way Home Permanents?

The exact reason for the decline in sales of the popular do-it-yourself home permanent will probably always remain unknown. But one suggestion advanced herewith is that the industry didn't do very much to encourage the "style" of long, well-curled locks. Most of the ads show how one saves money, time, and effort, but few suggest the very idea of having long hair. New, short hair styles and aerosol sprays to hold the curls, all may be responsible for the home permanent sales drop, but someone should be selling the idea of long hair as glamorous . . . most men like it better than crew cuts.

It all boils down to what some may call a basic concept of advertising. Many times you have to sell an idea along with a product. Advertising a better mousetrap will appeal to some, but the idea that you should catch mice has to be implanted in the buyer's mind before he decides to buy any mousetrap at all.

Young Men on Their Way Up

One of the "hottest" products in today's pharmaceutical marketing is Merck Sharp & Dohme's Diuril. Dr. Frederick C. Novello was head of the research team that discovered it.

Under 40, he came by his interest in chemistry through the inspired teaching of Harvard's Louis Fieser. He took both his B.S. and his Ph.D. from Harvard, writing his doctoral dissertation on carcinogenic hydrocarbons. During World War II, as a member of the National Defense Research Council, Dr. Novello helped develop the "napalm" firebomb.

A weekend gardener and photographer, he lives in Lansdale, Pennsylvania with his wife Sally and their two children.

Frederick C. Novello, head of the Merck Sharp & Dohme research team that discovered Diuril.

*Paul Klemtner & Company, Inc.

Colonial

CELLOPHANE PACKAGING

adds

SPARKLE

Diamond bright! This best describes the sparkling appearance of Colonial's cellophane package, the wrapper that makes an eye-appealing container for our quality dropper and assembly units.

Glistening Colonial packages are available in other materials too, such as glassine, foils and the Polymer-coated films. Individual wrapping problems are taken in stride.

Let our technicians make free samples to your exact specifications. We have a Special Services Department that will provide precision calibration in silk screening and hot stamping, too. Contact a Colonial representative listed below or write to us directly.

Specialists in Glass or Plastic Droppers and Assemblies for Nearly a Quarter of a Century

Represented by:

CHARLES E. SCHWAB
122 E. 42 St.
New York 17, N. Y.
OXford 7-0760

ALLEN J. GRETSCH
327 LaSalle St.
Chicago 4, Ill.
WAbash 2-1619

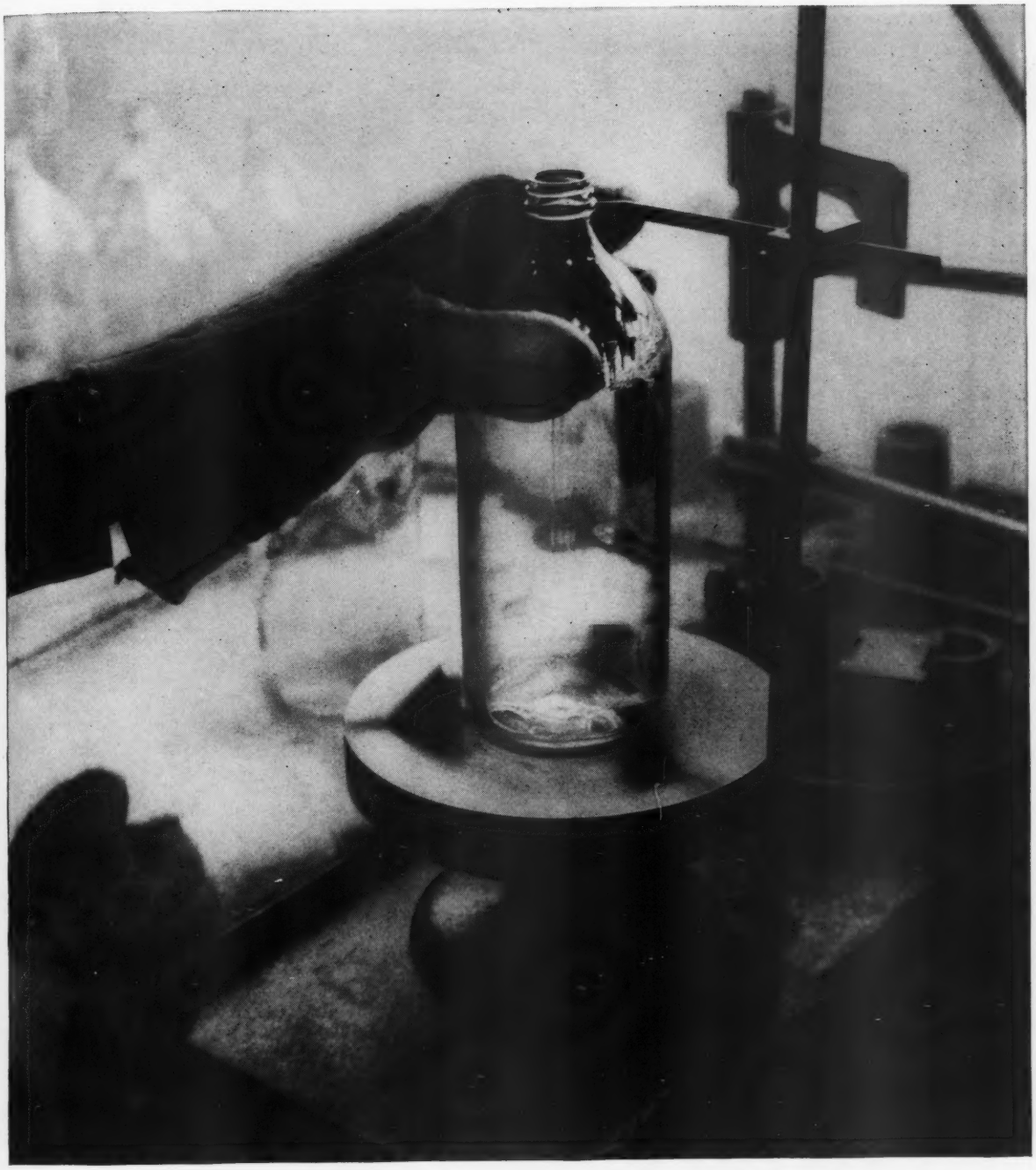
HARRY M. GRABER
811 S. 53rd St.
Philadelphia, Pa.
GRanite 6-6311

GABLER & GABLER
435 S. LaCienega Blvd.
Los Angeles 48, Cal.
BRadshaw 2-2995

RICHARDS GLASS COMPANY
102 Atlantic Ave.
Toronto 3, Canada
LEnox 2-3311

COLONIAL APPLICATOR CO.

VINELAND, NEW JERSEY



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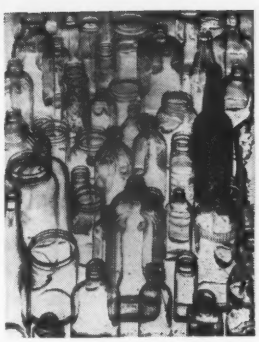

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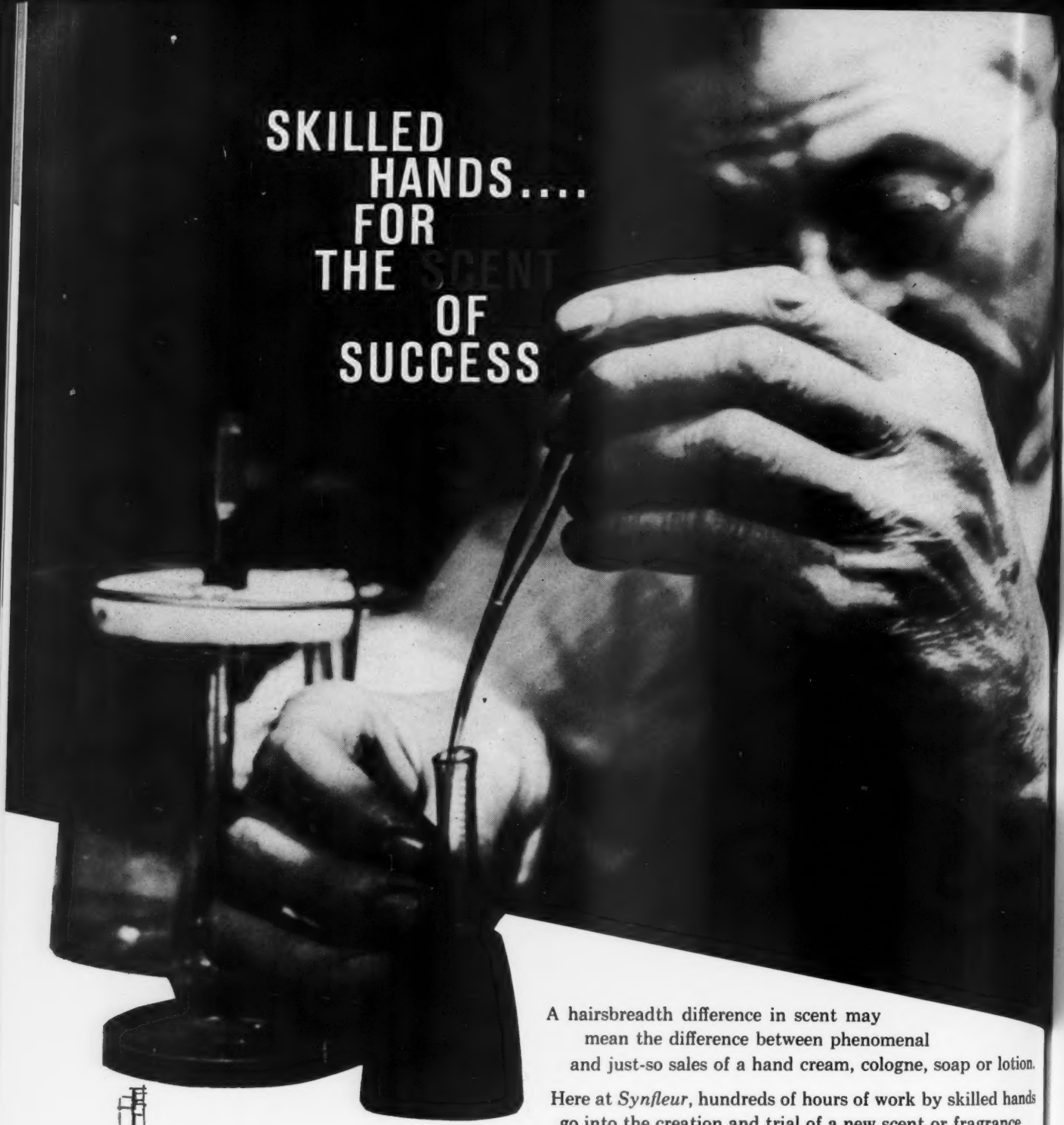

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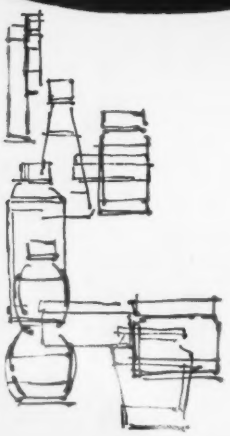

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Patent thoughts and trends

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Utility in Drug Patents

Readers of this section are quite aware that in recent years the U. S. Patent Office has been more demanding with respect to the so-called utility requirements to be met by patents in the drug field. The situation reached the point where the drug industry found it advisable to form a committee to present its views to the Patent Office. Nevertheless, to date, there has not been any noticeable lessening of the strictness of the Patent Office position.

It now comes as welcome news to those in the drug field to learn that the highest authority with respect to questions dealing with the matter of obtaining U. S. patents has recently raised its voice in favor of a more lenient requirement with respect to utility. Reference is made to a decision by the U. S. Court of Customs and Patent Appeals in the case of two Ciba inventors, John A. Nelson and Anthony C. Shabica. Before going into any consideration of the case in question, it is advisable to point out that the decision of the Court is not a final decision; and, indeed, the Patent Office has filed a petition asking the Court to rehear the case. Nevertheless, as of this date the situation is as reported here.

The invention dealt with the production of intermediates in the preparation of steroids. The application stated that the intermediates could be converted to saturated 14-hydroxy steroids by hydrogenating the $\triangle^5$-double bond, by catalytic methods as an example. There was nowhere in the application any statement that any of the resulting steroids have therapeutic properties. The claims dealt with the intermediates as new compounds.

The Patent Office Examiner rejected the claims as "lacking in utility." The Board of Appeals upheld the Examiner because there was no teaching in the application of any physiologically active steroids and because there was no evidence that the applicants ever produced a useful steroid from their intermediates.

*Richards and Cifelli, Newark, New Jersey

The Court filed three opinions. The majority opinion, by Judge Rich, pointed out that there was a certain amount of confusion in the case because the Patent Office rejection was based on a scrambling of two separate and distinct statutory requirements, that of Section 101 of the Patent Law, that an invention must be "useful" to be patentable, and the requirements of Section 112, as to what a specification must contain to comply with the law. The Court felt that it first had to reach an understanding as to the "utility" requirement of the law and then proceed to a consideration of what, if anything, Section 112 requires the applicant to say about it.

Utility. The Court, in considering what the statutes require on the matter of utility, pointed out that the grand objective of the entire patent system is to promote the progress of the useful arts; and for this reason it is a prerequisite to patentability that an invention for which a patent is sought must be useful. In a painstaking scholarly review of the statutes and other authorities on the question, the Court drew the simple conclusion that all that is required as respects utility is that the patented thing must be capable of producing a result and that the result must be a good result. If the function performed by an invention is injurious to the morals, the health, or the good order of society, then utility has not been shown.

The Court then applied this legal standard and determined that applicants' intermediates were useful. In coming to this conclusion the Court said that the intermediates were of a kind never before made and that they are of a type steroid chemists can use in well-known reactions to produce steroids of a class at least some members of which are known to have useful therapeutic properties. The Court felt that the new intermediates were fairly as useful as the lipsticks, nail enamel and nose-reforming lacquer which had been held useful by the Patent Office Board of Appeals in other cases. The Court further felt that the present invention contributed to the progress of an art which is possibly of even greater usefulness to mankind than the cosmetics art. This art—new steroids, which can be made into other steroids—and the development of this art was felt by the Court to be not frivolous, worthless, detrimental or injurious to society. The Court ruled that any invention that makes a contribution to a useful art is a useful invention.

Disclosure in patent specification. The Court found that the law requires that the specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

This was the real crux of the case as found by the Court. The Board of Appeals had ruled that the applicants had not complied with the requirement that they "fully describe how to make and *use* the invention . . . set forth the best mode contemplated of carrying it out." The Court did not agree with the Board.

The Court noted that the applicants had fully described their intermediate compounds and how to make them. With respect to the best mode of carrying out their invention the Court pointed out that their invention is the new compounds and the specification contained the best way known to the applicants of making these compounds. With respect to how to use the invention, that is, the intermediates, the Court found that applicants met this test. In the Court's words, referring to the applicants:

"They have said to those skilled in the art: Use them as intermediates to make steroids having analogous structures; do it by hydrogenating the delta-5 double bonds by catalytic methods, the way you always do. Maybe you'll get a thera-

peutically useful steroid as a product. We have given you the new androstenes and they will be useful to you in your research. Are they entitled to a patent on this basis? We think they are. So far as we can see, they have fully complied with the statutes. The making of new steroids, or old steroids in new ways, necessarily advances a useful art and the basic purpose of the patent system is served."

The Court differed with the Board on the crucial point of whether it was necessary for the applicants to disclose a *physiologically active steroid*. The Board ruled that it was, and since applicants had failed in this regard the Board ruled against them. The Court, however, ruled otherwise stating:

"Appellants have fully disclosed their new compounds and how to make them, suggesting that they have produced something which the steroid chemists can use to make still other compounds, both known and unknown. Before they can patent their new compounds, must they go on and actually make other steroids therefrom, and keep up their activities until they have, perhaps many years later, screened out through clinical tests at least one *therapeutically* active steroid? To make such a requirement is quite an effective way to remove the stimulus of the patent system from this kind of research, at least one objective well worth promoting. It seems to us the invention is 'useful' long before this point is reached as a research aid which helps to reach it. This is not a speculative or merely possible utility but a presently existing utility. The research workers in the steroid art are specialists who will know what to do with appellants' androstenes. That there is such a recognized art has become well known in patent law circles by reason of the fact that the many patents already issued in the field were selected for the first, and already successful, experiment in the United States Patent Office in mechanical searching. The U. S. Pharmacopeia has a 'Steroid Advisory Board.' (15 Ed., p. vii). It is reasonable to assume that this art is in the category of *useful* arts which Congress intended to promote; and how anyone could believe it is not promoted by supplying its workers with new intermediates is difficult to comprehend."

The Court in this case was careful not to interfere in any way with the practice of the Patent Office of requiring proof of assertions concerning beneficial therapeutic effects on human beings. Indeed, the Court stated:

"It is entirely proper that such assertions be carefully investigated to determine their truth, but this is not such a case. No claim whatever is made that appellants' compounds themselves have any therapeutic properties or that steroids produced from them by hydrogenation or otherwise would necessarily have such activity. We see no reason whatever for applying here the kind of rule of strict proof of medicinal effectiveness which applied where 'invention' or patentability is predicated on a claim to such effectiveness or where the claimed invention is a process of treatment."

In spite of the fact that the Court has upheld the Patent Office in so far as requiring evidence to back up assertions to therapeutic efficacy, as a practical matter, it is felt that the Court has opened the door to avoiding such requirements in many cases by its ruling in the Nelson and Shabica case.

There was a rather strong dissenting opinion filed by one of the Judges and it will be interesting to see whether the Court adheres to the decision it handed down this past June.

Hormone-Containing Cosmetics

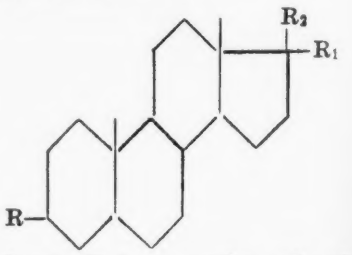
The marriage of the drugs and cosmetics fields is exemplified in a recent patent, U. S. 2,845,381, obtained by Organon, Inc. on cosmetic preparations for the treatment of human skin.

The purpose of the preparations is to improve the personal appearance, particularly in cases of aging or senile persons. According to the patent, the preparations disclosed in it stimulate and replace the epidermis, assertedly preventing dehydration and atrophy, the basic causes of changes seen in aging skin.

The patent points out that cosmetic creams already are on the market for the purpose of reducing wrinkles and other effects of aging. However, such preparations, which contain oestrogen, are said to have undesirable side effects particularly on the uterus and breast and also give rise to the possibility of activating early malignant changes.

The known preparations are said to have only a temporary stimulating effect as to skin mitosis.

The Organon inventors employ as stimulating agents steroids having the formula:



wherein R is a member selected from the group consisting of hydroxyl and oxo, R_1 is of the group consisting of α-ethinyl and α-hydroxyl, and R_2 is of the group of β-hydroxyl and hydrogen.

The assertion is made in the patent that while these substances are related to sexually active hormones they are themselves free from such effects. As specific examples of active agents the patent mentions inactive stereoisomer of testosterone, known as cis-testosterone, Δ^5-androsterdiol-3β: 17α; and 17α-ethinyl-Δ^4-androsten-17β-ol-3-one.

In addition to the use of the indicated steroids the patent points out that cholesterol should be eliminated from the cosmetic preparation, in order to insure that the active substances are retained in the skin and not passed to any appreciable extent into the general circulation.

Example 1, taken from the patent illustrates an ointment-like preparation according to the patent teachings.

"A cream base consists of the following substances, the proportions being by weight:

	Parts
Glyceryl monostearate	15
Arachis oil	5
Cetyl alcohol	1
Glycerine	10
Water	100

The glyceryl monostearate and the glycerine are mixed with the water with a small amount of the arachis oil and cetyl alcohol, and then the rest of the last named substance added with continued mixing. In the preparation of a cosmetic cream, a quantity of ethisterone

(Continued on page 522)

SHAVING CREAMS

work up a sales lather in aerosol cans by CONTINENTAL

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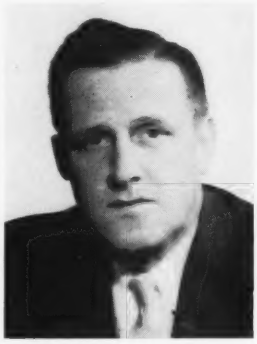
NEWS...

Kolmar Executive Offices Moved to New Jersey

W. J. Wick, president, Kolmar Laboratories, has moved his headquarters to Port Jervis, New Jersey. G. J. Entringer, vice-president-controller of the company, has also moved to the Port Jervis offices.



W. J. WICK

In announcing the move, Lessing L. Kole, chairman of the board, explained that the concentration of the industry in the East has increasingly required Mr. Wick's presence; consequently, it was felt that the establishment of these executives in Port Jervis would be in the best interests of customers as well as of the company. Other Kolmar executives will function as heretofore, Mr. Kole said, and Mr. Wick will be available for any midwest conferences necessary.

William Buth, vice - president, Wickhen Products, Kolmar's Chemical Division, will also move to Port Jervis, to head up a new division of Kolmar research, besides continuing his responsibilities as vice-president of the Chemical Manufacturing Division. Until further notice, Wickhen Products will carry on in Milwaukee.

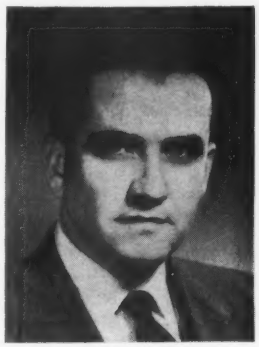
Lilly Appoints Ginn

Kenneth P. Ginn has been named manager of Eli Lilly & Company's production methods departments. Mr. Ginn, who has been chief of the plant layout department since 1950, joined Lilly in 1946 as a plant layout engineer.

Before joining Lilly he served at the Kingan Division of the Hygrade Food Products Corporation and the Allison Division of General Motors Corporation.

Pressel Named Vice-President

Charles H. Pressel has been appointed vice-president in charge of production of Burroughs Wellcome & Co. (U.S.A.) Inc., according to



CHARLES H. PRESSEL

William N. Creasy, president. Mr. Pressel has been with the company since 1939.

Allstadt Elected

Louis N. Allstadt has been elected a director of George Lueders & Company, and has been appointed assistant to Frederick G. Buehler, executive vice-president of the company. Mr. Allstadt has been with the Lueders firm for 23 years.

Merrell Promotions

Two promotions have been announced by Frank N. Getman, president, Wm. S. Merrell Company. Harry J. Long was advanced to the position of director of marketing, succeeding Frank J. Messmann, who has become assistant to the general manager of Vick Manufacturing, the parent company of Merrell. Mr. Long has been with Merrell since 1946.

HARRY J. LONG

Tom H. Brown, who has been with the firm for ten years, was promoted to production superintendent of Merrell.

Hudnut Appoints Executive Vice-President

The appointment of Gerard S. Fowler as executive vice-president and general manager of the Richard

GERARD S. FOWLER

Hudnut Division has been announced by John S. Hewitt, president of the Family Products Division, Warner-Lambert Pharmaceutical Company.

Mr. Fowler was previously vice-president and director of sales of the Richard Hudnut Division. Since joining the company in 1924, he has held a variety of positions.

Bander Promoted at Mead Johnson

Mead Johnson & Company has announced the promotion of Arthur Bander from sales representative to eastern district sales manager for the company's Parenteral Division, with headquarters at Kew Gardens, Long Island. He joined them in 1953.

Reger Named Sales Manager

Joseph V. Reger has been appoint-

JOSEPH V. REGER

ed sales manager for all five grades of Foremost Lactose, according to an announcement by Douglas L. Mann, director of sales, Western Condensing Company. Mr. Reger began with Western in 1950.

W. Boyd O'Connor *(left)* passes gavel to Ralph Clark, his successor as chairman of DCAT Section of the New York Board of Trade.

Clark to Chair N. Y. DCAT

Ralph A. Clark, vice-president of the J. T. Baker Chemical Company, Inc., was elected chairman of the Drug, Chemical & Allied Trades Section of the New York Board of Trade at the Section's recent annual meeting. Chosen to serve with him are: William W. Huisking, Charles L. Huisking & Company, Inc., vice-chairman; James Day, Dow Chemical Company, treasurer; William J. Quinn, Merck & Co., Inc., counsel; Helen L. Booth, secretary.

William J. Schieffelin, III, vice-president, Schieffelin & Company, was named representative to the parent board of directors.

Named to the executive committee for three-year terms are: Robert E. Horsey, Givaudan - Delawanna, Inc.; W. Ward Jackson, Commercial Solvents Corporation; Robert H. Kampschulte, Celanese Corporation of America; E. J. Oertel, Esso Standard Oil Company; Evan R. Spalt, Ortho Pharmaceutical Company. E. Lloyd Bernegger, Bistol-Myers Products Division, and Griffin Crafts, J. W. Wilson Glass Co., were reelected.

Those continuing to serve out one or two years of their three-year terms on the board are: Norman C. Babcock, Union Carbide Olefins Company; E. D. Bowes, Kimble Glass Company; Paul J. Cardinal, Hoffmann-La Roche, Inc.; Fred A. Coe, Jr., Burroughs, Wellcome & Company; Dr. Charles E. Dutchess, consultant; Harrison S. Fraker, Topics Publishing Company; Leon W. Miller, Plastics & Coal Chemicals Division, Allied Chemical; Wm. J. Schieffelin III, Schieffelin & Co.; F. M. Schwemmer, White Lab.; Paul E. Weber, Chas. Pfizer & Co.; J. E. Zacharias, McKesson & Robbins.

Hatton to Manage New Shulton Subsidiary

The formation of a new subsidiary, Shulton Limitada, which will operate in Argentina, has been announced by David Gregg, Jr., vice-president of Shulton, Inc. James A. Hatton, who joined Shulton in 1956, has been named manager of the new branch.

It is anticipated that operations will be established prior to the Christmas selling season.

Church and Behrmann Promoted

A. W. Schubert, executive vice-president, Emery Industries, Inc., has announced the promotions of Lee F. Church to the newly created position of controller, and Robert A. Behrmann, to director of purchases and traffic.

Mr. Church has been with Emery since 1948 as director of market research.

Mr. Behrmann has been Emery's director of purchasing since 1954, having joined the firm in 1948.

Klapp Heads Research Lab.

The research and development activities of the J. B. Williams Division of Pharmaceuticals, Inc., have been integrated with the Pharmaceuticals, Inc., Technical Division,

IRVING KLAPP

with S. R. Weiner as director of research and L. G. Marvinney, chief chemist.

Irving Klapp heads the new cosmetic research laboratory. Mr. Klapp was formerly employed by Shulton and, more recently, by Revlon.

Suppositoria Labs Moves

Suppositoria Laboratories, Inc. has announced the removal of their office and laboratories to new and larger quarters at 158 Allan Boulevard, Farmingdale, New York.

Roche Appointments

Hoffmann-La Roche, Inc., has announced two appointments. The first is that of Robert A. Handfield as sales promotion manager, Roche Laboratories. He will also continue to direct the activities of the Sales Education Department. Mr. Handfield joined Hoffmann-La Roche in 1953.

The second is that of Wilbur M. Monday, who has been promoted to the newly created position of trade relations manager for Roche Laboratories. Mr. Monday joined Roche in 1931.

Norex Names Hamilton

Promotion of Don Hamilton to the post of vice-president and sales manager of Norex Laboratories, Inc., proprietary drug affiliate of Schenley Industries, Inc., has been announced by R. Blayne McCurry, president of Norex and of SchenLabs Pharmaceuticals, Inc. Mr. Hamilton, who has been for 25 years in the drug field, joined Norex in 1956.

Cox Made Wholesale Sales Manager at McKesson

Jack W. Cox, formerly district sales manager of the Southeast Division office of McKesson & Robbins,

JACK W. COX

has been appointed wholesale sales manager for McKesson Laboratory Products, according to Herman C. Nolen, president. Mr. Cox joined McKesson in 1946.

Industrial Engineer at Norwich

Fred W. Hansen has been appointed industrial engineer at Norwich Pharmacal Company, according to Thomas J. Eaton, vice-president and director of production. Mr. Hansen was formerly with the Corning Glass Works.

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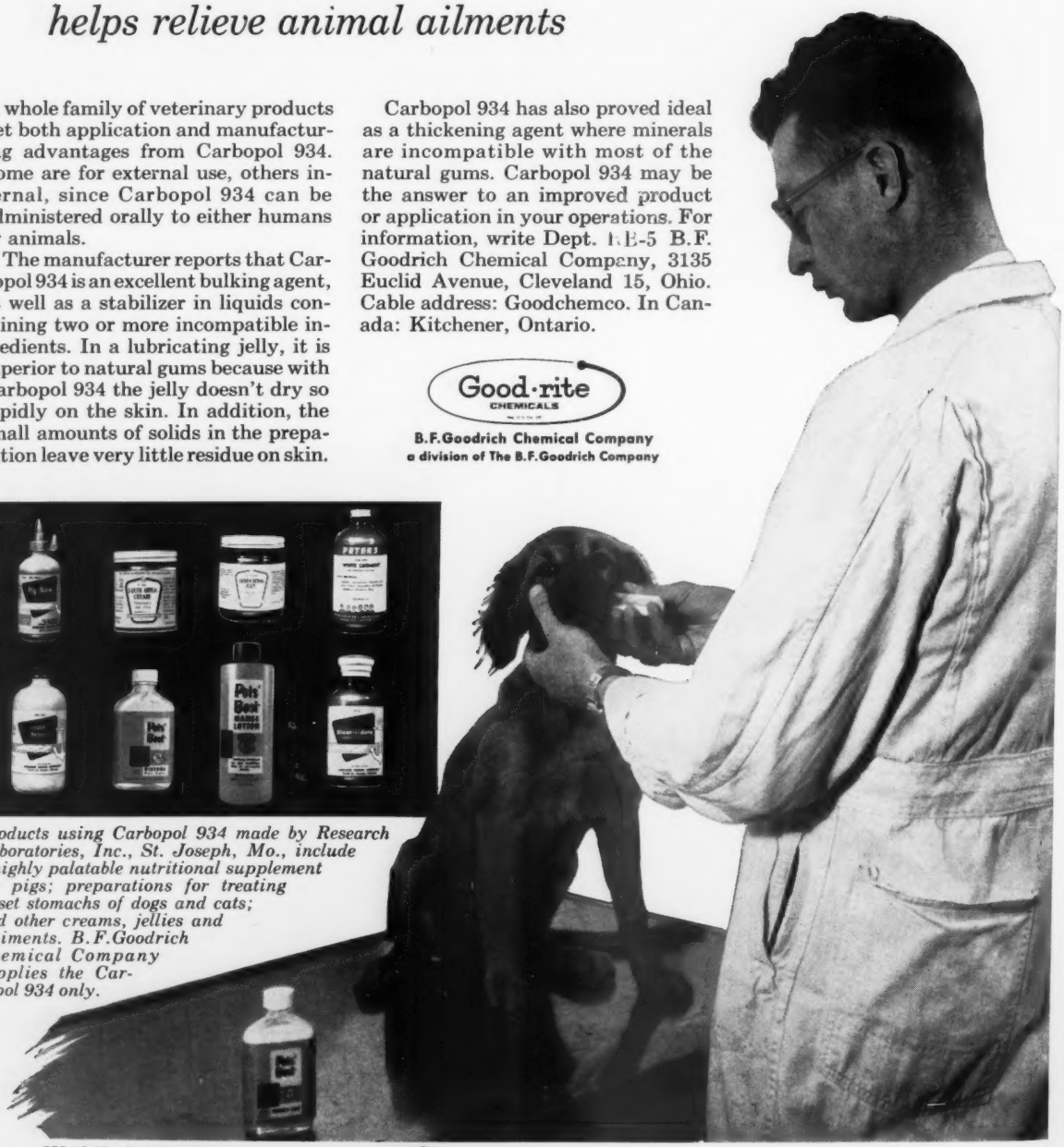

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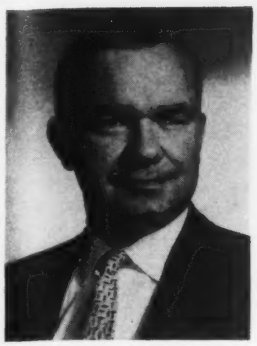


ROBERT S. HALEY

J. WARREN SACKETT

WALTER R. PARIS

ROBERT H. ENDRES

Emery Appoints Four

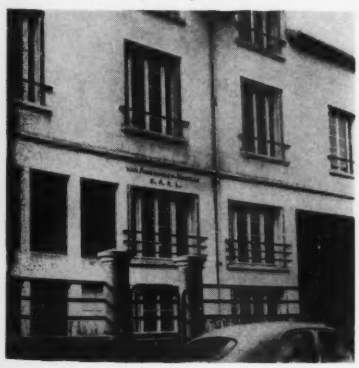
Four additions to the Organic Chemical Sales Department staff of Emery Industries have been announced by R. F. Brown, sales manager. Robert S. Haley has been appointed to the New York office; J. Warren Sackett, to Cleveland; Walter B. Paris, to Lowell, Mass.; and Robert H. Endres, to the newly created territory with headquarters in Pittsburgh.

Mr. Haley was with the Vopcolene Div. Mr. Sackett was general manager, Bay Rubber & Plastics, Inc. Mr. Paris was with Godfrey L. Cabot, Inc. and Mr. Endres with Standard Oil.

Van Ameringen-Haebler's Paris Subsidiary Celebrates

Van Ameringen-Haebler, Inc., New York manufacturer of perfume and flavor materials, recently marked the tenth anniversary of its Paris subsidiary, van Ameringen-Haebler, S.A.R.L., at a dinner celebration for its employees held at Le Grand Veneur in Paris. Attending the function from the parent company were A. L. van Ameringen, board chairman, and Ernest Shiftan, vice-president and chief perfumer.

The Paris building of van Ameringen-Haebler S. A. R. L., a subsidiary of the American firm, which was recently 10 years old.



Mead Johnson Appoints European Manager

Thomas Kirby has been appointed European manager of Mead Johnson International, with headquarters in Brussels, where Mead Johnson now is forming a Belgian subsidiary to market the company's products in the Benelux countries. Mr. Kirby was formerly director of South American distribution for Borg-Warner International, and, prior to that, assistant European manager of Pepsi-Cola International.

Commercial Solvents Names Guill

Albert P. Guill has been named western field representative for the Market Development Department, Commercial Solvents Corporation, according to Dr. Frank E. Dolian, manager of the department. Mr. Guill will be concerned with the development of new markets in Washtington, Oregon, Idaho, California, Nevada, Arizona and Utah, with headquarters in Los Angeles.

He joined Commercial Solvents in July 1954 as chief chemist of the Terre Haute plant laboratories, previously having been associated with Cutter Laboratories.

O'Brien Joins Thomasson

Donald F. O'Brien has joined Thomasson of Pa., Inc., Norristown, Pa., as technical director of the Personal Products Division, according to David R. Bagenstose, vice-president and general manager of the firm. Mr. O'Brien was formerly packaging chemist and supervisor of aerosol products of Colgate Palmolive Company.

Mr. Bagenstose indicated that the addition of Mr. O'Brien to the product development staff is keyed to Thomasson's expanding aerosol operations in its new plant at Norristown.

Kohnstamm Honors Hannan

J. William Hannan, Chicago salesman for H. Kohnstamm & Company, Inc., was recently honored on the occasion of his 50th anniversary with the company at a dinner attended by executives, sales representatives and associates in the Chicago office at the Conrad Hilton Hotel.

Robert H. Pulver, executive vice-president, presented Mr. Hannan with a 50-year diamond service pin and a substantial check, his associates, with a gold wrist watch.

Bollettieri Named

The West-ward Pharmaceutical Company has announced the appointment of James T. Bollettieri to the position of vice-president in charge of sales. Mr. Bollettieri was previously associated with Wampole Laboratories as director of sales advertising and promotion, and with National Drug Company.

The promotion of Sheldon O. Davis from production manager to general manager, and the appointment of C. William Salm as chief chemist in charge of quality control have also been announced.

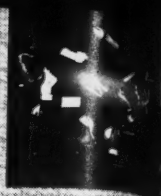
Governor Meyner (l), F. N. Schwartz (r), Bristol-Myers pres., open Products Div. plant, Hillside, N. J. as Hillside Mayor Winston watches.

Quality Control

Chemical Manufacturing

Chemical Engineering

Sales



Perfu
Evaluation

Perfume Oil Production

Cosmetic Research

Creative Perfumer

Aromatic Chemical Research

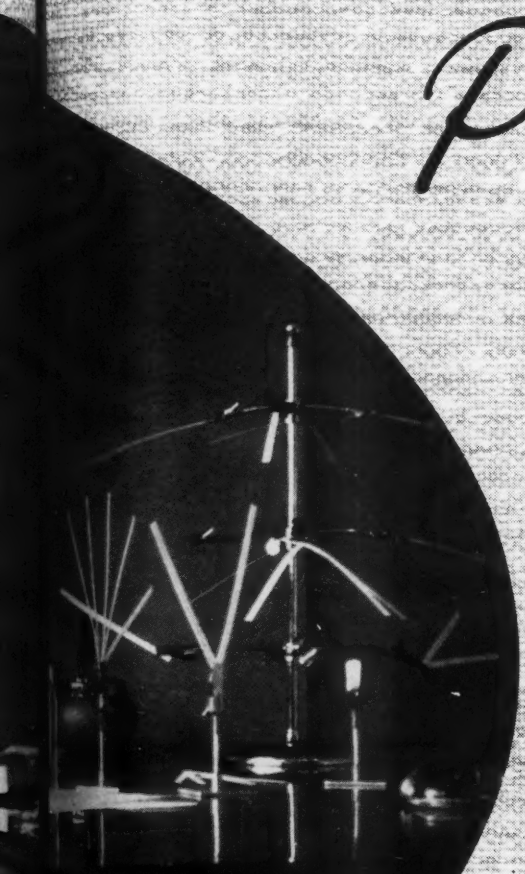
People...

THE IMPORTANT INGREDIENT

To achieve success in the marketing of a new perfume, requires the talents of many people.

Upon the CREATIVE PERFUMER rests the responsibility for the fragrance. His first requirement is that it be truly beautiful, for without intrinsic beauty any success will be short lived . . . . The perfume must be psychologically right to anticipate the preferences, trends, subconscious reactions of those he seeks to please . . . . Of equal importance is the technical rightness of his composition, lasting quality, chemical and physical compatibility . . . . Thus, the perfumer is an artist, a scientist, a psychologist, all tempered with sound and seasoned judgment.

A VAH fragrance goes beyond the ability of one master perfumer . . . . . it represents the best creative thinking of a group working as a team with over 400 years of combined experience here and abroad.



van Ameringen-Haebler, Inc.

521 WEST 57th STREET · NEW YORK 19, NEW YORK

van Ameringen-Haebler, S.A.R.L.
Paris, France

van Ameringen-Haebler, Ltd.
Toronto, Canada

Bristol Names Two

Roland H. Noel has been named director of sales promotion of Bristol Laboratories, Inc., according to an

ROLAND H. NOEL

announcement by Philip I. Bowman, president. In his new position, Mr. Noel will direct domestic advertising and promotion and supervise the company's public relations program. He has been with Bristol since 1946.

The president also announced appointment of Victor T. Johnson as

VICTOR T. JOHNSON

vice-president and director of marketing, succeeding Richard A. Anderson, who has resigned. Mr. Johnson's appointment marks his return to the company, which he left in 1952 when he became general manager of Smith-Dorsey Company.

Plough Purchases Creolin

Plough, Inc., has announced the purchase for cash of all capital stock of the Creolin Company from Merck & Company, Inc., and William Pearson, Ltd., of England. The purchase includes complete manufacturing and sales rights for the U. S. and possessions of Creolin, Hycol and V-C-P. All three products will be manufactured in Plough's Memphis plant.

Cutter's New Purchasing Agent

Thomas J. Teare has been appointed purchasing agent for Cutter Laboratories, succeeding M. W. Gib-

THOMAS J. TEARE

oney, who has become president of Corn King, Inc., a Cutter affiliate. Mr. Teare has been assistant purchasing agent for Cutter since 1951.

J. B. Wharton Elected President of National Can

The election of J. B. Wharton, Jr., as president and chief executive officer of the National Can Corporation has been announced by Robert S. Solinsky, who has moved from president to chairman of the board of directors. Donald C. Lillis, formerly chairman of the board and also of the executive committee, continues in the latter position. Mr. Solinsky and Mr. Lillis are both continuing to serve the corporation in active capacities.

Mr. Wharton, who holds executive positions in several other companies, was also elected a director of National Can, and a member of the executive committee. Other members of the executive committee are Mr. Solinsky, Mr. Lillis and Douglas Casey.

Schneider to Direct Rexall Packaging

Appointment of Carl F. Schneider as director of the packaging development department, Rexall Division of the Rexall Drug Company, with headquarters in Los Angeles, has been announced by Edwin L. Ramsey, vice-president, new products division.

Mr. Schneider had served as packaging engineer for White Laboratories, Inc. since 1945, prior to which he had been with the Edgar Steiner Co., Inc., of New York, consultants in packaging.

Kolmar Research Center Moved to Germany

Lessing L. Kole, chairman of the board of Kolmar Laboratories, Inc., has announced that Kolmar's Research Center has been moved to Germany. Dr. O. Jacobi, vice-president and director of research, who has made a lifetime study of the human skin and is recognized especially on the Continent as an outstanding skin physiologist, will have on his staff there three Ph.D's., an M.D., a histologist and other chemists, with additional scientists to be taken on at a later time. The center in Germany will function as it has here in the U. S. A., as a research laboratory without consideration of production problems.

Applied research will continue to be done in the United States under the direction of Michael Spinapolice, vice-president in charge of product development, and Charles Kircher, vice-president in charge of lipstick and related product research. In Canada, France, England and Australia, where Kolmar also has successful operations, further independent research will continue.

Mr. Kole said that Dr. Jacobi will return to the States several times each year for conferences with his colleagues at Kolmar, at which time he will also be available to customers, and, of course, to friends.

On September 14th, Dr. Jacobi presented a paper at the International Congress of the German Society of Cosmetic Chemists at Bonn, Germany, a symposium attended by about 45 members of the United States Society of Cosmetic Chemists. In 1957, he served on the panel at the eleventh International Congress of Dermatology at Stockholm.

Nordmark Pharmaceutical Labs Changes its Name

Nordson Pharmaceutical Laboratories, Inc., is the new name of the former Nordmark Pharmaceutical Laboratories, it has been announced by Frank J. Winter, on behalf of the company's board of directors. The change was made necessary by trademark registration problems in the U. S. and abroad, he said.

There will be no changes in the management or marketing goals of the company which will continue to collaborate with Nordmark-Werke of Germany in research and in marketing in the U. S. and Canada.

Elegance for a lovely lady

Your cosmetics help to make her lovely. To appeal to her they should be presented in elegant containers.

You may favor conventional or exotic shapes — in traditional gold or silver, polished to a jewelry finish . . . sunken or embossed designs . . . enamel coatings, stripes or patterns . . . engine turning or engraving.

Whatever your preference, Scovill can serve you to your complete satisfaction. By using our standard components, ornamented to your exclusive specifications, you can reduce fitting-up costs and speed delivery. Custom made cases can be created to your own designs or those of our art department.

Representatives qualified to discuss your cosmetic container problems may be reached in Scovill offices in these cities: New York—161 E. 42nd St., OXford 7-3222; Chicago—4105 W. Chicago Ave., NEvada 2-2303; Los Angeles—6464 E. Flotilla St., RAymond 3-7221.

Scovill Manufacturing Company—Cosmetic Container Division—99 Mill Street, Waterbury, Connecticut

Cosmetic Containers by **SCOVILL**

got a criollo taste with a forastero pocketbook?

It really doesn't matter any more. Now you can equal the taste of the most flavorful, highest-quality cocoa beans with new Rhodia chocolate flavoring, for less than forastero at market lows. Expert cocoa tasters who can distinguish the flavor of the fine criollo bean of Venezuela from that of Ceylon, who can taste the difference between the beans produced in Trinidad and Brazil, place Rhodia's imitation chocolate among the best. Rhodia can give your candies, syrups, puddings, powders, lozenges, ice cream a gourmet-chocolate flavor. Until you have tasted and tested the new Rhodia chocolate, you can't know how good a synthetic flavor can be. Technical representatives will help you determine just how to get the most out of this finer chocolate for *your* products. For information on Rhodia's new chocolate, coffee, butterscotch and other flavorings as fine as the best natural product, call or write today:

Rhodia INC., 60 East 56th Street • New York 22, N.Y. • (Phone: Plaza 3-4850)

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Philadelphia • Cincinnati • Chicago • Denver
Los Angeles • Montreal • Mexico City

Langeland Joins Wyeth

William E. Langeland has joined the Project Coordination Division of Wyeth Laboratories, according to an announcement by Charles J. Kern, vice-president in charge of research and development.

A graduate of Hobart College, Dr. Langeland did his graduate work in organic chemistry at the University of Rochester. Later he served as research associate in biochemistry at the New York State Experiment Station and as assistant professor of chemistry at St. Lawrence University.

Dr. Langeland was formerly senior development representative for the technical division of Pennsalt Chemicals Corporation.

New Eaton Labs Research Post

Alexander B. Neill has been appointed administrative assistant to Dr. Kenyon J. Hayes, director of chemical and biological research at Eaton Laboratories. Dr. Neill has been with Eaton since 1951 as senior research chemist.

Cosmetic Chemists in Europe

Members of the Society of Cosmetic Chemists flew from Idlewild Airport on September 5 for a tour of Italy, Germany, Denmark, Holland and Belgium.

While in Bonn, Germany, the group planned to attend the first technical meeting of the newly formed Society of German Cosmetic Chemists. While there Society members were expecting also to attend the second meeting of the International Congress of Cosmetic Chemists, which was formed in 1957.

Squibb Research Appointments

The Squibb Institute for Medical Research has recently appointed Charles Sih as a research associate in the Microbiology Division. Dr. Sih came to the United States in 1949 to continue his studies in biology and bacteriology.

Also appointed to the medical research staff are Dr. Edward Meyers, who will be associated with the Division of Microbiology, and Dr. Rhoda Buser Stasiak, who has been made a research associate in the Analytical and Physical Chemistry Division. Prior to joining Squibb, Dr. Stasiak was in charge of the infrared spectroscopy laboratory of the American Viscose Corporation.

Nerl Acquires Pellex

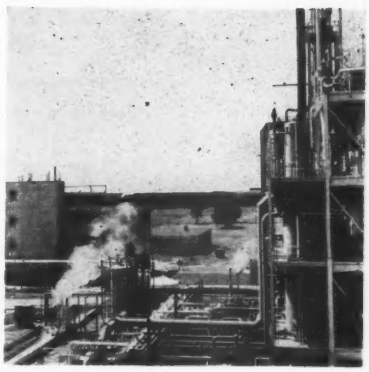
The acquistion by Nerl Incorporated of Pellex, surgical hair remover, has been announced by David A. Aransky, president of Nerl. A new marketing and advertising campaign is under way, Mr. Aransky said.

Sterling Drug Buys Pet Products Firm

Sterling Drug Inc. has acquired the assets, goodwill and business of House of Huston, manufacturer of household pet products, in a transaction involving an exchange of stock, it has been announced by James Hill, Jr., Sterling's chairman.

House of Huston, which will be operated as a Sterling subsidiary, has offices, plants and warehouses at Trenton, N. J. and Los Angeles, Calif. John D. Horn, president, will continue in that capacity. Continuing as vice-presidents are Raymond C. Dickmeyer and Ralph T. Miller.

Members of the Soc. of Cosmetic Chem. smile cheerfully at the camera as they leave for Europe.



B. F. Goodrich Chemical Company's new plant now in operation at Calvert City, Ky., where Carbopol will be produced in large volume.

Goodrich Chemicals Opens Carbopol Plant

J. R. Hoover, president, B. F. Goodrich Chemical Company, division of B. F. Goodrich Company, has announced the start of volume production of Carbopol at the company's new plant at Calvert City, Ky. The plant has an immediate capacity of 70,000 pounds a month, and is so designed that capacity can be readily increased.

Carbopol, a water-soluble polymer, was described by Mr. Hoover as "the most versatile agent ever discovered for thickening, suspending, dispersing and emulsifying." It is already in use in cosmetics, tooth paste, printing inks and polishes.

Upjohn Opens Distribution Center in Panama

The Upjohn Company's new, locally designed and built distribution center in the Colon, Panama, Free Zone, was opened on September 16 by the President of the Republic of Panama, Ernesto de la Guardia, Jr. The modern, 16,500 square-foot center, headquarters for Upjohn Overseas Corporation, a subsidiary of the Kalamazoo company, is new servicing 35 nations in the eastern hemisphere, with plans to include another 10 nations in the western hemisphere in its field of operations. Nations in which other Upjohn subsidiaries now exist will not be served by the new Panamanian distribution center, according to Robert S. Jordan, president of Upjohn International Operations, Inc.

Land for the new building was leased from the Panamanian government and title for the modern structure will revert to the Republic when the lease is terminated.

Increasingly the product of choice...

SINDAR'S G-11® (HEXACHLOROPHENE U.S.P.)

Here are the facts which have convinced so many leading manufacturers of soaps and cosmetics that G-11 is the most effective germicide and deodorant available.

Deodorant Action: Scientific studies have proved that G-11 remains on the skin even after washing. It therefore provides *continuous* control – between washings – of bacteria that cause perspiration odor.

Proof of Skin Degerming: 40 independent investigators agree that G-11 reduces the bacterial population of the skin by 95% or more. 150 scientific publications attest to its effectiveness. Over 95% of America's hospitals use it for surgical scrub and other purposes.

Consumer Acceptance: More consumers buy G-11 – Hexachlorophene – soaps than any other deodorant bar. Hexachlorophene is known to millions of people.

Soap Compatibility and Stability: G-11 is effective in *all* types – bar, powder, and liquid soaps and detergents. It is also non-corrosive, alkali stable, effective at all pH's.

Non-Irritation of the Skin: Established by its use in billions of cakes of soap and millions of units of cosmetic and pharmaceutical products such as lotions, oils, powders and ointments for babies as well as adults.

Quality: All production meets U.S.P. specifications.

Availability: Immediate shipment of truck or carload quantities from stock. Available around the world.

Technical Service: Sindar discovered hexachlorophene, holds the patents, pioneered its use in antiseptic and deodorant soaps, and is ready to assist you with your technical problems and to supply data on its varied applications.

SINDAR® Corporation
Industrial Aromatics and Chemicals

321 West 44th Street, New York 36, New York

Fitzsimmons Agency Retains Charles Dutchess

Dr. Charles Dutchess, long-time medical director and consultant to the pharmaceutical industry, has been retained as medical consultant by Donald F. Fitzsimmons, Inc., a new advertising agency which opened its doors last month at 200 East 42nd Street, New York, to specialize in pharmaceutical accounts.

Mr. Fitzsimmons, who recently withdrew from Burdick, Becker & Fitzsimmons, where he had been a vice-president, treasurer and co-founder, had previously built and headed the Chicago office of William Douglas McAdams, and prior to that he spent six years at Abbott Laboratories as a creative writer and product advertising manager.

Distillation Products Appointments

Wallace J. Quick, who has been with the Distillation Products Industries division of Eastman Kodak Company since 1941, has been appointed assistant general sales manager of the firm, according to Robert L. Edwards, DPI general sales manager. His office will be at the Rochester headquarters.

John F. Hanrahan has been named Chicago district sales manager, succeeding Mr. Quick. He first served DPI as a chemist in 1949.

Others in new sales positions are Gunther H. Doerfert, formerly Kansas City, now in Dallas, and Norris Gilliam, Jr., in Atlanta. Mr. Hanrahan and Mr. Gilliam were formerly with the Memphis office, which has been closed.

Union Carbide Appointments

New assignments for John J. Berry, Melvel W. Duncan and Hugh E. Klein, have been announced by Union Carbide Chemicals Company, division of Union Carbide Corporation. Mr. Berry is now district manager for Kansas City; Mr. Duncan for St. Louis, and Mr. Klein, formerly product manager in the New Chemicals group, is the new district manager for Chicago.

The company has also announced the appointment of H. Robert Dobbelaer as UCON flurocarbons office manager at the new unit at Institute, West Virginia. Mr. Dobbelaer joined Union Carbide in 1940.

Plax Promotions

Eight promotions in its sales staff have been announced by Plax Corporation, Hartford, Conn., producer of blow-molded plastic containers and oriented polystyrene film and sheet.

William R. Bolton has been named general sales manager, containers, and A. K. (Ken) Thorn, general sales manager, film and sheet.

E. S. Marsh replaces Mr. Thorn as district sales manager, Chicago, and will be assisted by Ludwell E. Gaines, Jr. Gilbert B. Luce succeeds Mr. Bolton as district sales manager, New York, with John J. Barile named assistant district manager.

Heading two newly established district offices are Russel E. Ames, Philadelphia, and John W. McLaughlin, Cincinnati.

Donald A. Breyer, president, California Cosmetic Association and president, Anatole Robbins Cosmetics, shakes hands with Wayne Stevens, editor, Butler Publications, who spoke at a C.C.A. luncheon meeting in favor of the so-called right to work issue. Also standing, George Bodle, Bodle & Fogel law firm, who took the negative side, and Peter Clapp, chairman of the C.C.A.

Dowe Retiring from DPI

Frank Dowe, Jr., has announced his retirement from the Distillation Products Industries division (DPI) of Eastman Kodak Company, where he has served for the past 14 years as sales manager for DPI vitamins with headquarters in New York City. Lynn H. Farmen has been named New York district sales manager to succeed Mr. Dowe, according to Robert L. Edwards, DPI general sales manager.

Prior to joining DPI, Mr. Dowe had served as sales vice-president of a General Mills, Inc., division located in New York and was connected with that company for 11 years.

Mr. Farmen joined DPI in 1939, serving in several positions.

George Barr Renamed To Aid Handicapped

George Barr, president, Barr & Company, Chicago chemical manufacturer, has been reappointed for the eighth consecutive year as chairman of the Governor's Committee on Employment of the Physically Handicapped. The committee develops employment opportunities for handicapped workers.

Mr. Barr, himself an amputee, received a presidential trophy in 1951 for his contribution in this cause.

Huffer & Smith Appoints Mann

S. B. Penick & Company has announced that Jason T. W. Mann has been appointed head of research and development for Huffer & Smith Ltd., Fine Chemical Division of C. F. Gerhardt Ltd., Penick's associate company in England. With this appointment, Dr. Mann becomes senior technical executive of Huffer & Smith Ltd. and of the English parent company, C. F. Gerhardt Ltd.

Purepac Centralizes Production

In a move to centralize and consolidate its manufacturing facilities and to provide rigid and uniform quality control, the Purepac Corporation has announced that all of its manufacturing and packaging will take place at the new plant at 200 Elmora Avenue, Elizabeth, N. J.

Purepac has appointed the Rabin Co. of Los Angeles, California, as a regional warehousing and distributing agent on the west coast.

Charles J. Lynn

Charles J. Lynn, vice-president and member of the board of directors of Eli Lilly & Company, died September 23. Mr. Lynn had been with Lilly since 1895, and had served in a variety of capacities.

Charles Allen

Charles Doughty Allen, retired vice-president of H. Kohnstamm & Company, Inc., died at his summer home in Sagamore Beach, Mass., on September 7. Mr. Allen had been with Kohnstamm for more than 50 years when he retired in 1954.

Harry T. Johnson

Harry T. Johnson, retired cosmetic company executive, died September 26 in Garden City, Long Island, after a long illness.

Mr. Johnson had been in the toilet goods industry for nearly 40 years, and had served in executive positions with Elizabeth Arden, Helena Rubinstein and Frances Denney. At his retirement, he was general sales manager of Parfums Corday.

Embassy Labs Expansion

Edward Sagarin, formerly associated with Standard Aromatics, Inc., and Givaudan-Delawanna, Inc., has joined the staff of Embassy Laboratories, according to an announcement by Franklin H. Cooper of the firm. In his new position Mr. Sagarin is to supervise sales and customer relations.

The appointment is part of an expansion program that followed the acquisition by Embassy of a newly enlarged plant, laboratories and offices at 2896-98 Fulton Street, Brooklyn 7, N. Y. The phone number is MIdway 7-5020-1.

Bristol Opens New Warehouse

The opening of new southwest warehouse and distribution facilities for Bristol Laboratories, Inc., has been announced by Richard A. Anderson, vice-president and director of marketing.

Located in the Brook Hollow industrial district outside of Dallas, Texas, the new facilities occupying 3,000 square feet of floor space will serve Louisiana, Oklahoma, New Mexico, Arkansas, Mississippi and Texas. Charles Moore is warehouse manager.

Schuette Elected at Dow

William H. Schuette, general manager of the Midland Division of the Dow Chemical Company, has been elected a company vice-president. He will continue his duties as division general manager. Dr. Schuette began with Dow in 1941.

Markoe to Counsel Warner-Lambert

Appointment of Frank Markoe, Jr., as counsel to Warner-Lambert Pharmaceutical Company has been announced by Alfred E. Driscoll, president. Mr. Markoe succeeds Robert B. Clark, who was recently appointed senior vice-president of Warner-Chilcott Laboratories.

Perfumery Associates To Operate Ph. Chaleyer

Perfumery Associates, Inc., New York, has taken over the operation and management of Ph. Chaleyer Inc., which was founded and operated by Philip Chaleyer until its sale a few years ago. The offices are at 160 East 56th Street, N. Y.

Research and development facilities are to be combined. The managing officers are: Henry Retailliau, president; Thomas Miserendino, vice-president; and Robert Luthy, treasurer.

Pneumatic Equipment To Be Made in England

Pneumatic Scale Corporation Ltd., Quincy, Mass., has announced the completion of arrangements for the manufacture of Pneumatic Scale machines in England by Vickers-Armstrongs (Engineers), Ltd., and their sale through Rockwell Pneumatic Scale, Ltd.

Posner Resigns

Arthur S. Posner has announced his resignation as president and director of Paragon Distributing Corporation, distributors of Roux and Eternol haircolorings and toilet preparations.

Mr. Posner's immediate plans are for a vacation with his family, after which he expects to continue in the industry.

Veterinary Exhibitors Elect Conner

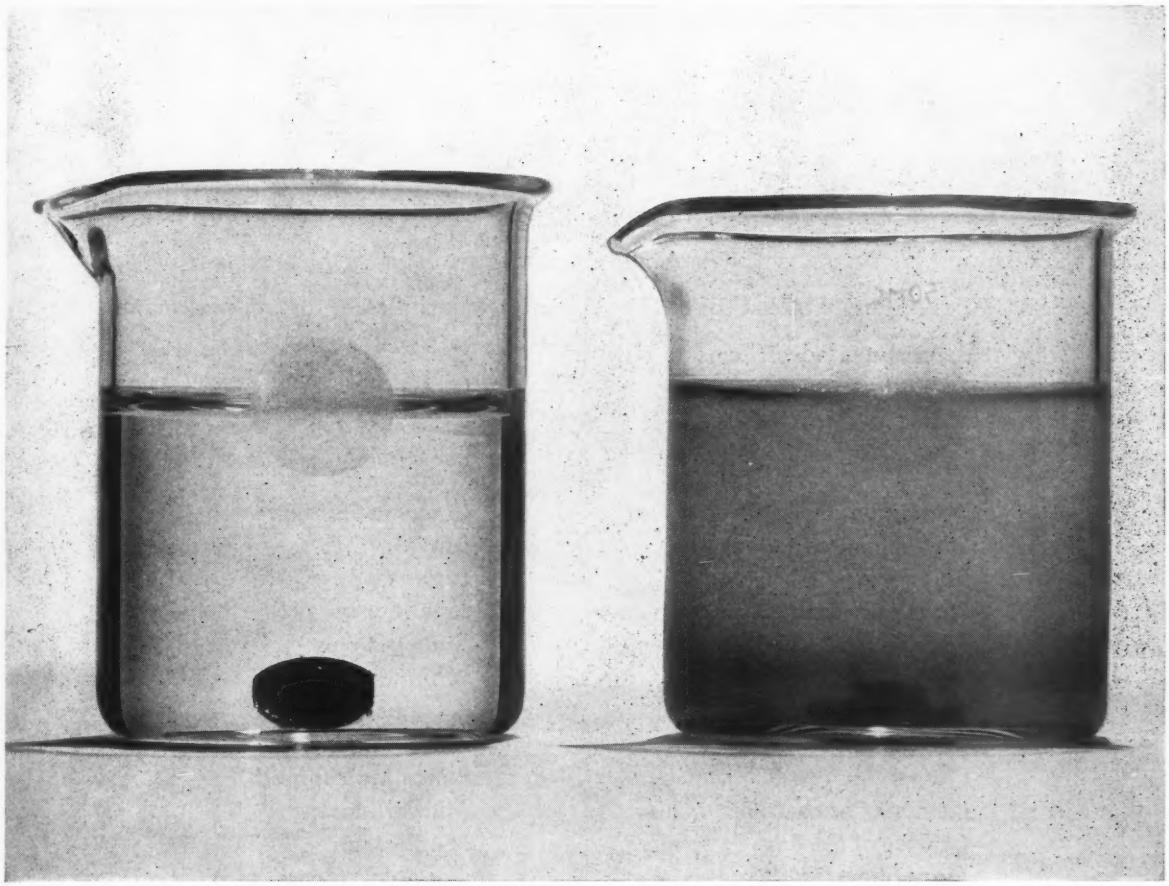
Roy R. Conner, veterinary marketing manager for Schering Corporation, Bloomfield, N. J., was elected president of the American Veterinary Exhibitors' Association at the group's annual meting, which was held in conjunction with the National American Veterinary Medical Association meeting in Philadelphia.

Bard Acquires Harvey Co.

The acquisition by Bard Pharmaceuticals, Inc., Yonkers, N. Y., of the plant and the production and laboratory facilities of the former G. F. Harvey Co., of Saratoga Springs, has been announced by Robert H. Broh-Kahn, M.D., president and founder of Bard.

Reorganized and operated as Bard-Saratoga Laboratories, Inc., the newly acquired firm will maintain the same policies and standards as those of the parent organization in Yonkers. Among its officers and executives are: Mr. Broh-Kahn, president and treasurer; E. Richard Memoli, vice-president; Charles J. Benjamin, controller; Benjamin K. Souler, director of laboratories; and Joseph Tkacheff, Jr., director of production.

At the new Bard-Saratoga plant: B. K. Souler, lab. dir.; R. H. Broh-Kahn, pres.; J. Tkacheff, dir. prom.



This lecture-table stunt demonstrates the enteric-coating idea in vivid if unsophisticated terms. Standardized U.S.P. testing procedure adds the factor of mechanical agitation.

This is artificial gastric juice at pH 1.5. The tablet was coated with Eastman C-A-P Cellulose Acetate Phthalate. In 24 hours nothing has happened.

This is artificial intestinal juice at pH 7.5. Tablet identical with the one on the left has completely disintegrated in one hour.

For medicaments that should get to the intestine

There are medicaments already developed which would be more useful if only you could get them from the mouth to the intestine.

Now is a good time to re-evaluate such medicaments, perhaps to reactivate products having side effects that enteric coatings might eliminate.

For now you can readily turn to *Eastman C-A-P Cellulose Acetate Phthalate*. The troubles encountered with the enteric coating substances of the past are gone.

Eastman C-A-P Cellulose Acetate Phthalate depends not on the solvent action of water, not on a reliable rate of stomach voiding, not even entirely on alkalinity in the intestine. It depends on the total chemical climate of the intestine.

The material has been used on more than a billion tablets and has taken them intact into the intestine, where they can do the most good. It permits the use of high-speed coating techniques. It is compatible with certain plasticizers.

Eastman C-A-P Cellulose Acetate Phthalate is a free-flowing white powder that's easy to weigh and measure. It doesn't stick. It stays stable in 10- and 50-kilo drums in cool, dry storage.

Full data, including prices, are obtained by writing to *Distillation Products Industries,* Rochester 3, N. Y. Sales offices: New York and Chicago • W. M. Gillies, Inc., West Coast • Charles Albert Smith Limited, Montreal and Toronto.

"Eastman" and "C-A-P" are trademarks

Also ... vitamins A and E ... distilled monoglycerides

... some 3700 Eastman Organic Chemicals for science and industry

DPi

Distillation Products Industries *is a division of* **Eastman Kodak Company**

By Far . . . the largest number of Perfume and Fragrance advertisers ever to use one magazine are now telling their story in BEAUTY FASHION. Read BEAUTY FASHION each issue for the fascinating story these perfume advertisements tell.

See in BEAUTY FASHION:

Angelique, Inc.
Elizabeth Arden Sales Corp.
Balenciaga
Blanchard, Inc.
Bourjois
Hattie Carnegie
Caron Corporation
Carven Parfums
Chanel, Inc.
Parfums Charbert, Inc.
Charles of the Ritz (Directoire)
Mary Chess
Cigogne Sortilege
Ciro, Inc.
Colonia, Inc.
Corday, Inc.
Coty, Inc.
Countess Maritza
Jean d'Albret
Dana, Inc.
Christian Dior
Parfums d'Italia
D'Orsay Sales Corp.
DuBarry
Duvelle's
Parfums Evyan Co.
Fabergé, Inc.
Guerlain, Inc.
Houbigant, Inc.
Lancome Sales, Inc.
Lanvin
Lucien Lelong
Lenel Company
Lentheric, Inc.
Lubin
Parfums Marcy, Inc.
Maromay, Inc.
Prince Matchabelli
Miahati, Inc.
F. Millot, Inc.
Germaine Monteil
Myrurgia
Jean Naté, Inc.
Jean Patou, Inc.
Robert Piguet
Renoir
Maurice Rentner Perfumes, Inc.
Nina Ricci
Rigaud
Marcel Rochas
Roger & Gallet, Inc.
Nettie Rosenstein
Parfums Schiaparelli, Inc.
Simonetta
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BEAUTY FASHION THE MAGAZINE OF PERSONAL SELLING

101 West 31st Street, New York 1, N.Y.

MEDICINAL, PHARMACEUTICAL AND VITAMIN FLAVORS

by Florasynth

We maintain a special laboratory for research and development of flavors for use by the pharmaceutical industry including the development of appropriate flavors suitable for specific individual preparations...

WE LIST HEREIN FLAVORS OF SPECIAL CHARACTERISTICS WHICH HAVE RECEIVED WIDE ACCEPTANCE:

SPECIAL LIQUID FLAVORS

	SUGGESTED USAGE TO 1 GALLON SYRUP
Caramellone Syntharome Imit. Butterscotch Flavor	1/4 to 1/2 oz.
Concentrated Imitation Butterscotch Flavor	2 ozs.
Concentrated Imitation Caramel Flavor	1 oz.
Imitation Tame Cherry Flavor 2:1	2 ozs.
Syntharome Imit. Wild Cherry Flavor Special	1/4 to 1/2 oz.
Imitation Wild Cherry Flavor 2:1	2 ozs.
Imitation Chocolate Aroma Flavor	2 ozs.
Cola Type Flavor 1:1	1/2 to 1 oz.
Cola Type Flavor 4:1	4 ozs.
Concentrated Lemon-Lime Flavor	1/4 to 1/2 oz.
Licorice Type Flavor 1:1	1/2 to 1 oz.
Syntharome Imitation Maplenut Flavor	1/2 oz.
Syntharome Imitation Raspberry Flavor	1/4 to 1/2 oz.
Syntharome Imit. Tutti-Frutti Flavor	1/4 to 1/2 oz.
Imitation Tutti-Frutti Flavor 2:1	2 ozs.
Imitation Rum and Butter Flavor	1/2 oz.

The indicated usages to the gallon of syrup are mentioned purely as indications for test evaluation work in manufacturer's own formulations.

ENTRAPPED POWDERED FLAVORS

Florasynth being one of the first companies to manufacture powdered flavoring materials, we list below descriptive details of what we feel to be the finest type of New Entrapped Powdered Flavors. Features of these New Entrapped Powders are (1) as high as 50% oil content by weight. (2) Instantly dispersable. (3) Non-hygroscopic. (4) Extremely economical. Shelf life studies have indicated excellent results.

	SUGGESTED USAGE TO 100 LBS.
Apple Imitation	2 to 4 oz.
Banana Imitation	2 to 4 oz.
Cherry Imitation	2 to 4 oz.
Cola Type	2 to 4 oz.
Grape Imitation	2 to 4 oz.
Lemon	2 to 4 oz.
Lemon-Lime	2 to 4 oz.
Lime	2 to 4 oz.
Loganberry Imitation	2 to 4 oz.
Maple Imitation	2 to 4 oz.
Orange	2 to 4 oz.
Pineapple Imitation	2 to 4 oz.
Raspberry Imitation	2 to 4 oz.
Root Beer	2 to 4 oz.
Strawberry Imitation	2 to 4 oz.
Tutti-Frutti Imitation	2 to 4 oz.

Other Entrapped Flavors Developed on Request

Standard Packing: 150 lb. containers

Florasynth **LABORATORIES, INC.**

EXECUTIVE OFFICES: **900 VAN NEST AVE.,** (BOX 12) **NEW YORK 62, N. Y.** • CHICAGO 6 • LOS ANGELES 21

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. . . that's the production capacity of the new Stokes Model 551 Rotary Tabletting Press at 3750 tablets per minute.

This is the highest production rate in the industry—achieved with a machine no larger than the well known Stokes Model 540—and without increase in head speed. A new die locking arrangement, called Chord-Loc, permits 51 stations of tooling to be used in a punch circle the same diameter as that of the 540. What's more, you don't have to retool for the 551—it uses the same standard punches and dies as the 540—41 station, and the BB-2—33 and 37 station presses.

You can get complete information on this new four-ton, high-speed machine by calling your nearby Stokes office—or write today.

Tablet Size Specifications
Maximum diameter—7/16″
Maximum fill depth—11/16″

Pharmaceutical Equipment Division
F. J. STOKES CORPORATION
5500 Tabor Road, Philadelphia 20, Pa.

STOKES

Management Forum

BY FRANCIS CHILSON
INDUSTRIAL CONSULTANT

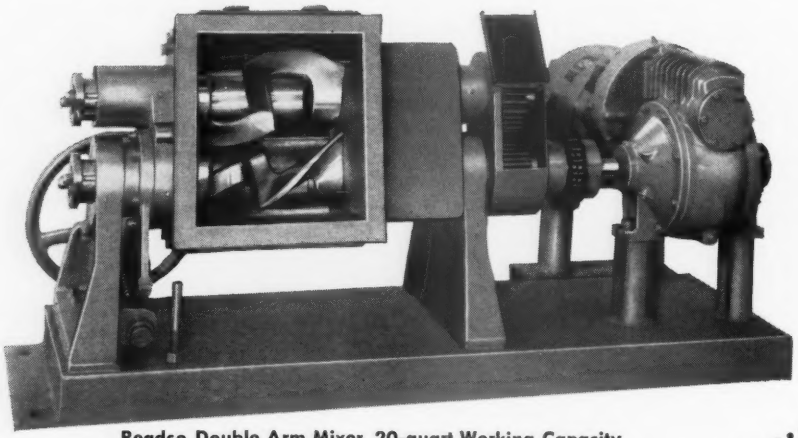
The Construction Program

It is a truism that no insider is capable of organizing and supervising a building program. Most plant managers and engineers will refuse to accept this because they have had the experience of making piecemeal additions to their own plants from time to time and they feel this qualifies them to direct a major program. Some people depend entirely upon the advice of their architects. The architect may never have built a factory before but if the Big Boss is sold on him nothing else matters. Most operators assume that the architect has on his own staff all the necessary structural, civil, mechanical and electrical engineers to do the job in its entirety. The fact is that not even the largest firms of architects in this country have a complete complement of engineering specialists. The majority have none. All engineering work is subcontracted to consultants. But very few architects will ever admit that.

Likewise there is a broad misconception of the work of the general contractor regardless of whether the contractor works under the direction of an architect or whether he operates as a package builder on his own. Like the architect the contractor likes to give the impression that his organization is self sufficient —that he has on his staff at all times a complete staff of engineering specialists. Every contractor has a nuclear staff: draftsmen, field supervisors, construction foremen, cost estimators and in some cases an architect or two and possibly one or more structural engineers. When he needs specialists he knows precisely where to get them in a hurry. Some contractors have offices in their own buildings—with space leased to independent consultants whom they call in from time to time as members of their own staffs. You can see how contractors and architects operate by visiting the Architects Building at 101 Park Avenue, New York. This large building is filled with architects, contractors, engineering consultants of all sorts and construction material outfits. I had my New York office in that building for some years, hence it was easy to observe the interplay of the forces behind the architects and the builders.

There is nothing wrong with this but people generally should know more about how the architects and the contractors they employ actually operate. It boils down to this: when you employ an architect you are employing a man who knows how (I hope) to collect and organize the specialists necessary to carry on the design of your building. If you employ a general contractor without an architect you are doing the same thing, except that contractors of extensive experience will have as regular employees more of the engineering specialists needed to construct the building. In brief: when you employ an architect and a contractor you are hiring two brokers. This is the way the construction industry is organized and probably always will be. It is ridiculous to assume that an architect can be an expert in every phase of building design and construction. Likewise it is ridiculous to assume that any contractor can carry at all times a complete staff of all the engineering specialists needed to construct all the different types of buildings he may be called upon to build

If you employ an architect and a builder, then be sure the builder respects the ability of the architect. There was never an architect born who could not be hoodwinked by any builder if the builder chooses to be unscrupulous or gets sore at the architect. And builders do get sore at architects because they have continually to cover up their blunders. I was at a builders meeting once at which it was the concensus that fifty per cent of the actual drawings or specifications they get from architects are either impossible to execute or wrong in some way. This sort of thing makes the builder sore because he has to correct the mistakes and convince the architect that they are in fact mistakes—and the builder doesn't get any-



Readco Double Arm Mixer, 20-quart Working Capacity

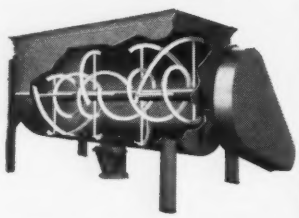
Predict production precisely with READCO Lab and Pilot Plant Mixers

Incorporating all the basic design features of larger production models, Readco Laboratory and Pilot Plant mixers enable you to make accurate forecasts for commercial processing.

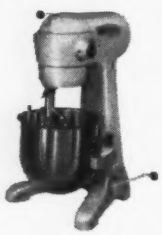
Mixing bowls are accurately machined and fitted . . . have vacuum covers and temperature controlling jackets. Overlapping sigma mixing arms are held in constant close clearance, eliminate dead spots, prevent build-up of materials, aid temperature control. Easily interchangeable mixing arms adapt to various materials or processes.

Ruggedly built of Type 316 stainless steel, or any commercial alloy, Readco lab and pilot plant mixers will efficiently handle even heavy viscous material. They are available from stock in 1, 3, 6, 20 and 40-quart working capacities, with fixed or variable speed drives. For more information see Chemical Engineering Catalog, pages 1483-1490 . . . or write direct.

READCO



Readco Spiral Ribbon Mixers—Batch or Continuous. Standard sizes 1 to 500 cu. ft. working capacities.



Readco Vertical Mixers, planetary action, multiple speed, 12 to 175 qt. working capacities. (Model K-20 illustrated)

Whatever the mixing job . . . a READCO mixer!

READ STANDARD

York, Pennsylvania

A Division of
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thing extra for doing this. But he does know that if he proceeds with faulty drawings or specs the blame will be put upon him. The architect is of course never to blame for anything.

Such being the case the manufacturer who handles his own building program without the advice of an expert in his own industry who has had a lot of building experience is taking the chance of not only getting an improperly designed and sited building, but of paying far more for it than it should have cost.

Research

So much is being written and spoken about research these days that almost everybody automatically assumes that research means the effort to discover something new. It can be and often is an effort to discover something old. Literature research fits into the latter category for everything in the literature is old. I had a prof years ago who was a nut on research methodology. He used to say that research is simply a means of acquiring useful information. He'd rant about defining terms before starting a project. He taught us how to run down clues through dictionaries, encyclopedias, reference books, libraries, government institutions, universities, private laboratories and commercial institutions. He used to dilate on the fact that the world is full of people who know the answers to most of your problems if you first learn how to locate such people and learn how to state your problems clearly. It is a common failing of people everywhere that they will try to solve their problems without first knowing what the problems really are. Fox ground it into us to define our problems first before we tried to solve them.

I shall never forget Professor Fox for what he did for me. I still use the method hammered into me so long ago. A funny example occurred during 1930. I was just starting my consulting business and I needed money badly. The late Oscar of the Waldorf, who years before had been a friend of my father's, sent for me and said he was going to quit the Waldorf. It was broke and unable to pay interest on its bonds. He therefore was going to quit and make the justly famous Oscar's Sauce on his farm near New Paltz, N. Y. His farm, a thousand-acre dairy farm, was managed by his son August. Oscar's plan was to build a canning factory on the farm and to grow everything needed for the sauce there, importing only the necessary spices. I told Oscar I didn't know anything about commercial canning or tomato base sauces and I didn't propose to build a factory for something I didn't know anything about. He said, "You're an engineer, aren't you? Find out."

I did find out, but I didn't know at the beginning the difference between a kitchen and a commercial formula. I didn't know that certain types of tomatoes are used for certain sauces. I didn't know that certain of the ingredients required certain climatic and soil conditions for successful growth and flavor. In short; I didn't know anything. But in three month's time as a result of a research methodology learned so long before I could have written an authoritative book on the commercial production of tomato base sauces. In addition to a huge technical file I had complete financial, distribution and marketing data. In short I had learned enough to advise Oscar that his scheme was not only impractical but impossible and I recommended that he sell his name on a royalty basis to an established producer, who could market a commercial approximation of Oscar's Sauce. I had the facts and they were unassailable.

Mrs. Tschirky (Oscar's wife) kissed me delightedly and said she'd thought all along the scheme was crazy because Oscar was too old to quit the Waldorf, but she hadn't dared to voice her opposition because Oscar was such a stubborn old cuss. August, Oscar's son didn't dare oppose the old man but he too was delighted with my report. Oscar was glum but he thanked me and gave me a bottle of rare wine. So I went home pleased that I had kept him from going broke. But because the project never came to fruition, I didn't send Oscar a bill for my services—three months of hard work. This was one aspect of Professor Fox's research methodology on which he had neglected to coach me. But I never made the same mistake again. And Oscar never made the mistake of reminding me that I hadn't sent him a bill. He had a methodology of his own.

Luck and The Drug Industry

The recession has affected neither drug earnings nor the prices of drug stocks. A weighted composite of the earnings and stock prices of Abbott, Parke Davis, Merck, Pfizer, Sterling, Bristol Myers, Eli Lilly and Schering for the years 1948—1957 inclusive shows the following with 1948 as 100:

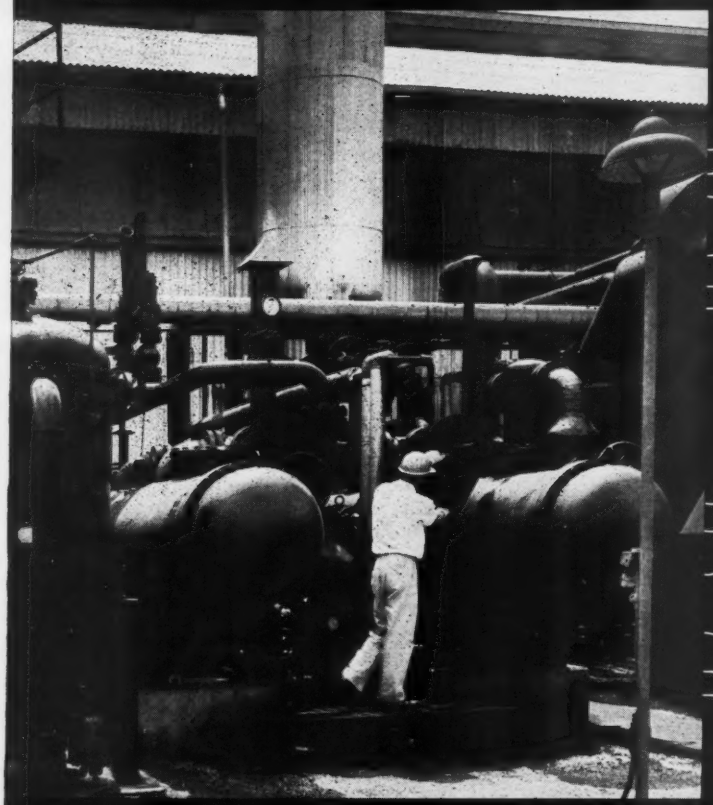
Sales	220.9
Net Income	195.8
Market Price Drug Stocks	218.6
Pre-tax Profit Margin	25.2
Return on Investment	18.8
Yield	4.0
Price-Earnings Ratio	12.7

The source of my information is the Bullock Fund. The same source indicated that, using 1947 as a base, drug sales had increased more than 190 per cent whereas disposable personal income had increased only 158 per cent and the population 115 per cent. These figures were compiled through 1956 and were based on U. S. Department of Commerce reports.

Thus it is seen that the drug industry sales are increasing at a rate much faster than the growth of population and it shows that people are spending a larger part of their income for drugs. This in large part is due to the increase in the proportion of chronic drug consumers in our population—that is, the old

At Spencer Chemical Company Ammonia Plant...

LECTRODRYERS stretch periods between defrostings



BY DRYING SATURATED AIR

—1 million cubic feet per hour at 600 psi and 40° F to minus 60° F dewpoint

BY DRYING SATURATED HYDROGEN

—20 million cubic feet per day at 300 psi and 40° F to minus 80° F dewpoint

At Spencer Chemical Company's Vicksburg, Mississippi plant, ammonia is produced by a process employing partial oxidation of natural gas. The other raw material is air . . . about 1,000 tons per day are liquified in an air-separation plant.

Lectrodryers stretch periods between defrosting . . . cut processing slowdowns and extend heat exchanger life. They DRY a million feet of saturated air per hour to a minus 60 F dewpoint . . . 20 million cubic feet of saturated hydrogen per day to a minus 80 F dewpoint.

Removing unwanted moisture with Lectrodryers can create new high levels of efficiency in *any* process involving air, gases or organic liquids. Lectrodryer engineers—utilizing more than 25 years of specialized experience—can fully appraise your moisture-removing requirements and recommend the *best* type of dryer for each application.

DO YOU HAVE A MOISTURE PROBLEM IN PROCESSING OR STORAGE?

Write for LECTRODRYER questionnaire, on which you can provide us with information needed to make specific recommendations regarding your drying needs. Pittsburgh Lectrodryer Division, McGraw-Edison Company, 303 32nd Street, Pittsburgh 30, Pennsylvania.

Leading industries look to

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World's First and Foremost Manufacturer of Commercial and Industrial Adsorbent Dryers

people. Now about 13 per cent of our people are over 60 as against 7.5 per cent in 1920. This statistic must be evaluated carefully because in 1920 we had only 105 million people as against 175 now. Putting it on a person basis, in 1920 we had in round figures 8 million people over sixty; now we have almost 23 million. That's a big increase in the geriatrics department.

Thus the drug industry thrives upon people and upon luck. It is not an industry which depends upon creating a market for itself as the automobile industry once had to do, and later on the radio, television, home appliance and airplane industries have had to do. And herein its luck lies. It does not have to change the style or character of all its products every year or so. Some of its products have enjoyed a steady sale for more than half a century. In spite of all the hullabaloo, the wonder drugs, the antibiotics, tranquilizers and vitamins account for only about half the total of ethical drug sales.

Unlike other industries plant efficiency has little or no bearing upon profits. Three of the most inefficient plants I was ever in are among the ten most profitable. Plant efficiency counts only when the company has few or no long profit items and manufacturers staples only.

Unlike other industries material costs—raw and packaging—are an unimportant part of total costs excepting in a few instances.

Now on the other side of the fence other industries do not have our distribution and marketing costs; they do not have our research costs and they do not have to take the grave financial risks that the drug industry must as in the case of Salk vaccine and Asiatic flue vaccine. And the industry is in mortal danger because too large a proportion of its total sales goes to the federal and state governments. A greater danger lurks here than most of us realize.

Honor The Physician

I found among my papers a memorandum written in a scrawl I did not recognize—so the note couldn't have been mine—the notation: *Ecclesiasticus: Chap. 38 et seq.* As I was preparing the column this month I decided to look it up. Here it is:

Honor the physician for the need thou hast of him: for the most High hath created him.

For all healing is from God, and he shall receive the gifts of the king.

The skill of the physician shall lift up his head and in the sight of great men he shall be praised.

The most High hath created medicines out of the earth and a wise man will not abhor them.

Was not bitter water made sweet with wood?

The virtue of these things is come to the knowledge of men, and the most High hath given knowledge to men, that He may be honored in his wonders.

By these he shall cure and shall allay their pains, and of these the apothecary shall make sweet confections, and shall make up ointments, and of his works there shall be no end.

Thus, the Bible on the interdependence of physicians and apothecaries. This on a modern scale means between physicians and drug manufacturers. A substantial number of our physicians are about as competent diagnostically now as they were when the foregoing passage was written. But the apothecaries have grown into chemists and druggists and into drug manufacturers. Those of you who own pharmaceutical stocks had better hang on to them for the Bible saith: "*and of his works there shall be no end.*"

The Newspapers

Sometime ago I mentioned to you that our civil liberties depended more than anything else upon active, nosey newspapermen hunting out newsworthy stories and scandals in our state and federal governments. A recent example of the value of newspapers to us was the announcement of Nixon's annoyance over the fact that some subordinate in the State Department revealed to a newspaperman the fact that 80 per cent of the letters received over the Quemoy incident are against further interference in Chinese affairs—or at least against war. Nixon should be annoyed! It's safe to say his blood won't be spilled if the ever-blundering State Department gets us involved in a war over a worthless little island, which is in reality part of the coast of China proper. From Nixon's annoyance it is apparent that we, the citizens, haven't got any right to know what's going on behind closed doors down there in Washington. In their snooping behind those doors, the newspapers perform their most important function in protecting our liberties.

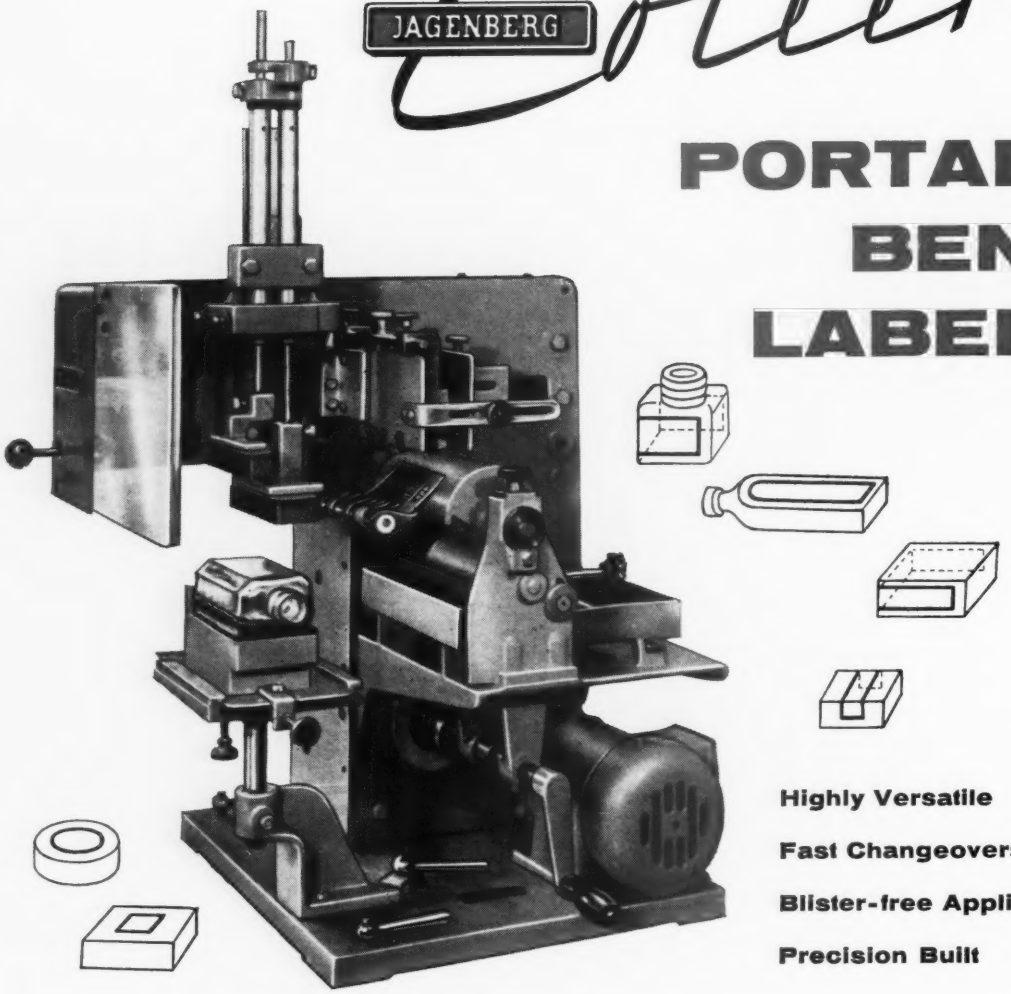
But because of the competition of radio and television the nation's newspapers are falling upon evil days. The process of attrition has been gradual and constant since the beginning of radio. Cities that once had four or five daily newspapers now have only one. Even in the great city of New York, the Herald Tribune came within an ace of having to close up shop. Lack of sufficient advertising revenue. All who make drugs and cosmetics, which can be advertised directly to the public, should give a greater share of advertising appropriations to the newspapers. They are our watchdogs.

Russian Education

The concentration of the Russians on education has no parallel in history. It is a credit to them. According to John Gunther's "Inside Russia Today," the majority of all the Russians were illiterate when the Communists took over the government forty years ago. Now the position is exactly reversed. No nation has ever matched that performance in that time. In Russia education is not the privilege of those who can afford it; education is for everybody. In Russia, Gunther says, libraries and bookstores are everywhere.

JAGENBERG *Colletta*

PORTABLE BENCH LABELER



Highly Versatile

Fast Changeovers

Blister-free Application

Precision Built

The Colletta bench-type labeling unit is the ideal solution to short run labeling problems.

Basically a semi-automatic, hand-fed unit, it is readily converted to an automatic machine by use of auxiliary attachments providing fully mechanized intake and discharge of objects being labeled. Labels are applied with full-surface glue adhesion to a range of shapes in bottles, jars, boxes, books, etc. up to diameter or height of 5½". Size changes are made within a maximum of five minutes.

Designed and manufactured by Jagenberg of Dusseldorf, this Universal Labeler is now sold exclusively in the United States by Pneumatic. Write for Bulletin 138 which provides detailed information. Better still, send in samples of objects presenting production labeling problems at your plant. A prompt analysis and quotation will be submitted.

PNEUMATIC SCALE CORP., LTD., 70 Newport Ave., Quincy 71, Massachusetts. *In* NEW YORK, *117 Liberty Street;* CHICAGO, *360 No. Michigan Avenue;* DALLAS, *318 No. Pearl Street;* ROCHESTER, *662 Monroe Avenue.* Also: FRED TODT CO., *2021 South Hill Street, Los Angeles; 1485 Bayshore Blvd., San Francisco; 105 Orcas Street, Seattle.*

★PNEUMATIC

Packaging and Bottling Equipment

Every factory has its own library. The former Ford factory in Moscow has a library of 150,000 volumes! And the libraries and book stores are crowded all the time. What impressed Gunther was the avidity of the Russians in all walks of life for education.

Russia is trying to eliminate education as a class distinction. By selective examinations and rewards for accomplishment she is unintentionally but in fact following the ideal set forth in Plato's Republic. If through the means she is following she can force or induce her people to *think* a major portion of the time she will lead the world in ten years time. Psychologists say that people, even educated people, utilize only a small amount of their brain power most of the time. Can you imagine what would happen if the Russians can find a way to induce their people to use their brains a major portion of the time? When hundreds of thousands or even millions of people become interested in the same broad field of endeavor, as medieval people were in art, a renaissance is inevitable. Russia has stepped ahead of us in some areas of science and in several of the arts: are we going to stand smugly by and let her take the lead in everything?

The Irish

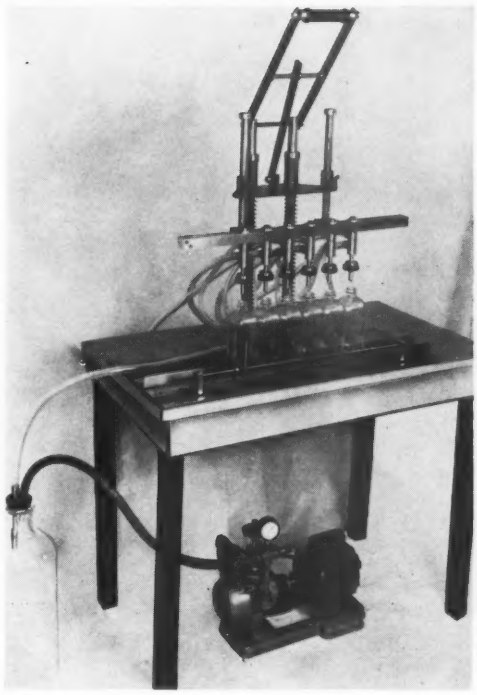
Irishmen and Americans of Irish extraction like to brag about the contribution of the Irish to American culture. Without arguing the point one way or another I should like to offer the opinion that the greatest contribution made by the Irish to America was made at the time Mrs. O'Leary kicked the cow and the cow kicked over the lantern and burned up Chicago. What a pity it is that the Chicago O'Learys are no longer permitted to keep cows!

Perl Portable Vacuum Filler

A low-priced, hand-operated portable filler capable of filling any container up to a quart in size, at speeds up to 30 quarts a minute, is now available from the Perl Manufacturing Company, Inc., 68 Jay Street, Brooklyn 1, N. Y. Available in models for filling by vacuum or gravity, or a combination of both, the Perl Portable Vacuum Filler is suitable for production runs as well as for intermittent and trial runs. Its light weight and compact size—25 by 16 inches—makes it exceptionally easy to handle.

Six filling valves are standard on all models. However, the number of valves can be varied to meet individual specifications. In addition, a simple adjustment permits the filling of one-gallon jugs. The valves and contact parts are of stainless steel, all connecting tubings of sanitary, transparent flexible plastic.

The Perl vacuum filler sells for $390, complete with vacuum pump, electric motor and all guages. The heavy-duty fan-cooled vacuum pump is equipped with a special regulating valve for setting a vacuum of any height, increasing the flexibility of the unit, permitting it to handle almost any liquid.



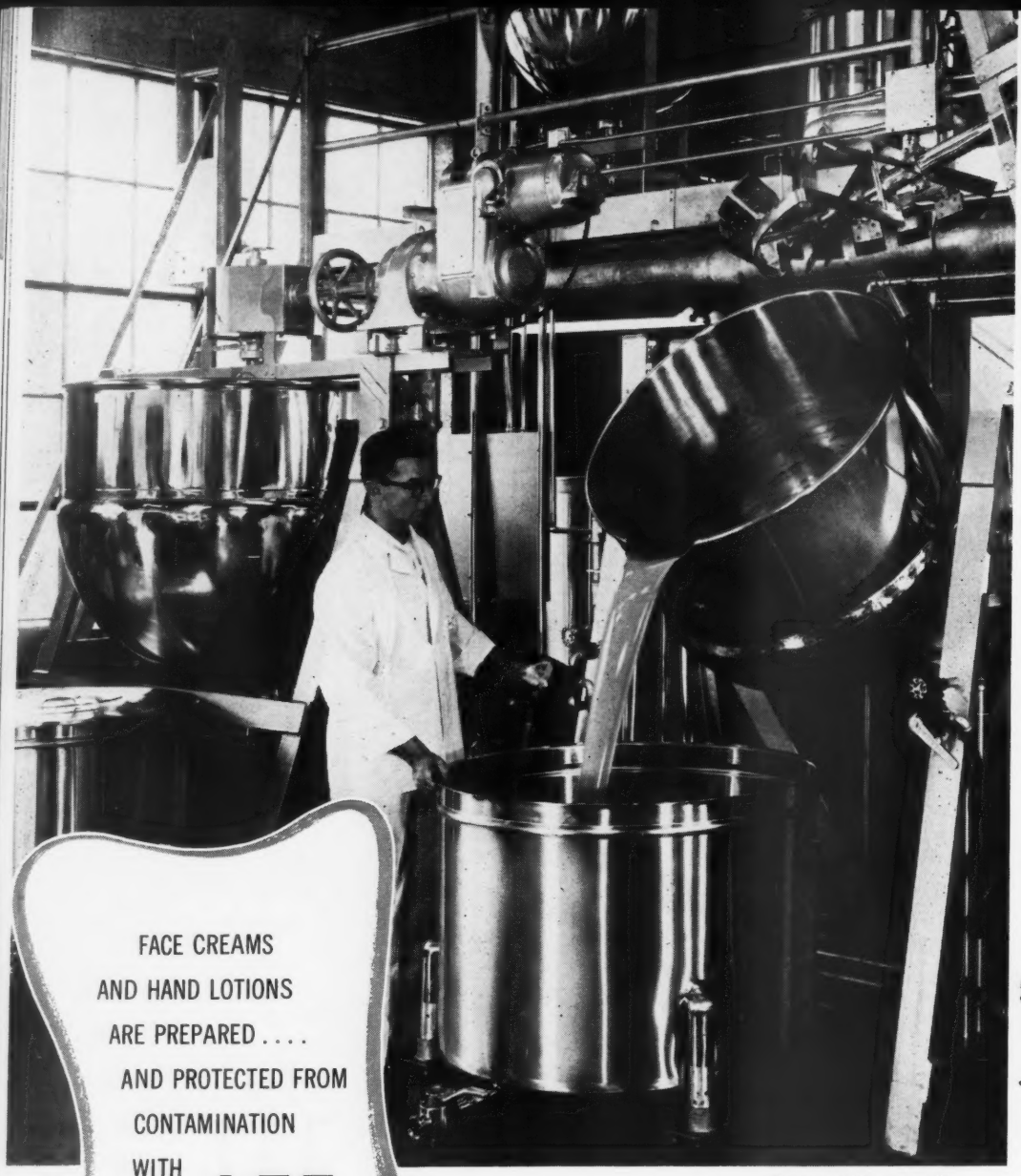
Gravity models, and gravity-vacuum models, at comparable low prices, also have many features found on standard filling machines.

Stokes Introduces "Torando" Mill

F. J. Stokes Corporation, 5500 Tabor Road, Philadelphia 20, has acquired the revolutionary new "Tornado" mill, a granulating and mixing machine of unique design featuring 360 degrees of screening area. The Tornado has an outstanding performance record in a number of installations in the chemical, plastics, food, drug and ceramic industries. It can also be used in many other types of plants, wherever materials must be reduced in particle-size or thoroughly mixed and blended. The machine is available in three sizes at present.

Material is ground and mixed by a cluster of whirling blades attached to a common vertical shaft. These create an air flow that is a virtual tornado and throws the material outward at high velocity against a cylindrical mesh screen which completely surrounds the rotor. In the process, the material is reduced uniformly in particle size, without excess of "fines," and is thoroughly blended or mixed.

Streak-free color-blending of two or more pigments, or of pigment with plastic, thorough dispersion of carbon-black, and similar mixing of dry materials is readily accomplished. Wet and sticky materials, such as ceramic clays, which cannot be processed in conventional equipment are easily handled in the Tornado mill, and when thus segregated and de-lumped, they increase the production of a dryer. Because of the larger screening area, the Tornado mill can proc-



FACE CREAMS
AND HAND LOTIONS
ARE PREPARED . . . .
AND PROTECTED FROM
CONTAMINATION
WITH

LEE STAINLESS STEEL KETTLES

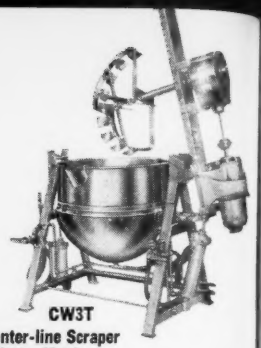
Courtesy of Charles of the Ritz

Assuring high quality control in the production of delicate creams and lotions, these Lee steam-jacketed stainless steel kettles are corrosion-resistant and easy to clean and keep clean.

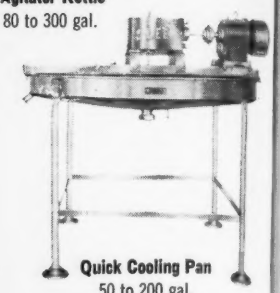
Complete product mixing is obtained through the use of Lee double-motion center line scraper agitators, whose large stainless steel scraper blades continually move the contents from the heated walls toward the center, keeping an even temperature throughout.

Lee hydraulic operated cylinders—using your present water lines—give perfect control and safety not only in tilting the kettles for pouring and cleaning, but also in raising and lowering the tilting agitators.

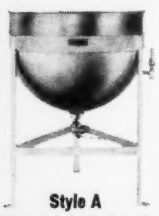
Descriptive bulletins for all of our specially-designed processing equipment available on request.



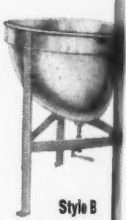
CW3T
Center-line Scraper Agitator Kettle
80 to 300 gal.



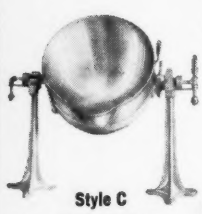
Quick Cooling Pan
50 to 200 gal.



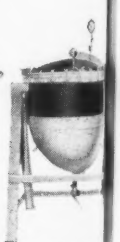
Style A
Two-thirds Jacketed
5 to 500 gal.



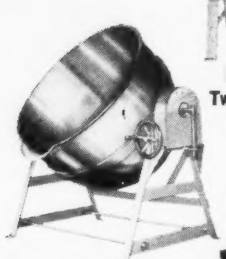
Style B
Full Jacketed
10 to 300 gal.



Style C
Two-thirds Jacketed
5 to 100 gal.

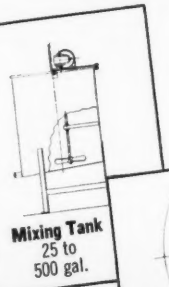


Pressure Kettle
Two-thirds Jacketed
40 to 200 gal.

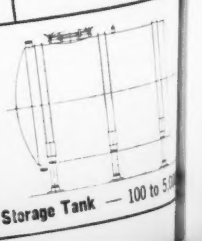


Style CW
Two-thirds Jacketed
80 to 300 gal.

Pulp Tank
500 to 2,000 gal.



Mixing Tank
25 to
500 gal.

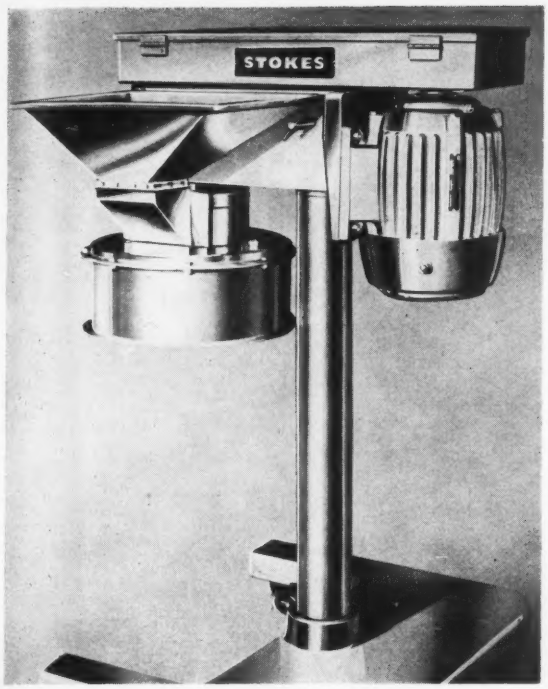


Storage Tank — 100 to 5,

Technical bulletins fully describing these processing units gladly sent on request.

LEE
METAL PRODUCTS CO., INC.
408 PINE STREET, PHILIPSBURG, PA.

Designers and Manufacturers of Corrosion-Resistant Processing Equipment for over 25 years.



ess heat-sensitive materials efficiently, without clogging or deterioration.

The number of blades and their spacing can be varied to give the best results on a particular material. From two to 14 blades can be fitted to the rotorshaft. Blades can be changed in a matter of minutes when they become worn.

The size of the mesh in the screen can also be varied according to the particle size desired. Both the grinding head and the screen can be removed quickly and easily for rapid cleanup when the material being processed is to be changed, and all parts where material might lodge are completely accessible.

The height of the unit and the vertical flow of material make feeding and removal easy and safe and keep operator fatigue at a minimum. No dust-evacuating blowers are needed for most materials; very fine material that is prone to dusting can be handled with special fittings to seal the bag to the outlet of the mill.

All parts of the mill that come in contact with material being processed are fabricated from stainless steel—for perfect cleanliness and freedom from contamination (important in processing foods and pharmaceuticals) and for resistance to corrosin (significant in the chemical and ceramic industries).

The mill is a compact unit, with drive motor and grinding head balanced on a cross beam supported on a vertical column. Grinding speed can be varied at will by selecting from three reduction ratios offered by the three step pulleys on the motor and grinder. The belts are totally enclosed for safety and cleanliness. The standard units now available are all mounted on castors, for maximum mobility from point to point within the customer's plant.

The new Stokes mill gives exceptionally high production per horsepower.

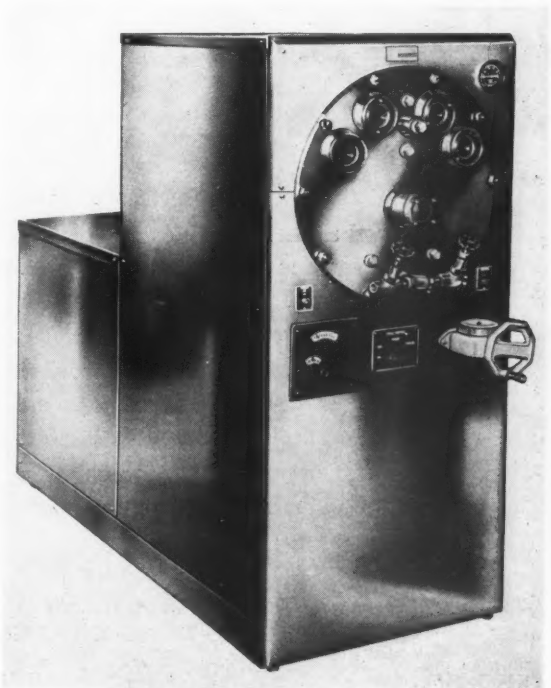
American Sterilizer's Biogen Makes Possible Large Experimental Cultures

A new apparatus, Biogen, that cultures large quantities of bacteria, yeasts, molds, and other microorganisms will enable hospitals, universities and research centers to carry on wider ranges of experimentation with microbial cells.

According to the manufacturer, American Sterilizer Company, 20 East 18th Street, Erie, Pa., the new apparatus provides the necessary organisms to carry out extensive experimentation in such diverse fields as bacterial physiology, enzymology, genetics, pharmacology, fermentation and virology—including bacteriophage.

Biogen consists of a double-walled, cylindrical, stainless steel chamber 16 inches in diameter and 30 inches in length, which houses a rotating agitator with aeration fins. Complete controls governing such processes as sterilization and agitator speed are conveniently located on the front of the all-stainless steel cabinet.

A culture of microorganisms is inoculated into a prepared sterile medium of mineral salts and sugars. These organisms multiply rapidly within the chamber until the desired population is reached. A pump then adds liquid nutrient and withdraws the bacteriological suspension at an equal rate through a cooling bath, and ultimately into a centrifuge where the cells are harvested. In Amsco's biological research department, a typical 10-hour production run of Biogen harvested 1400 grams of wet weight *E. coli* B cells.



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Roure-Bertrand Fils, Grasse, and Justin Dupont, Argenteuil, France, as well as their facilities in North Africa, India, the Far East and South America, have for decades been prime processors of basic ingredients for the perfumers of the world.

Their creative genius is attested by the many proven international successes in the field of fragrance requirements . . . be it in the development of original perfumes, colognes, aerosols, cosmetics, soaps and other toiletries . . . or in the masking area where odors have to be covered rather than developed.

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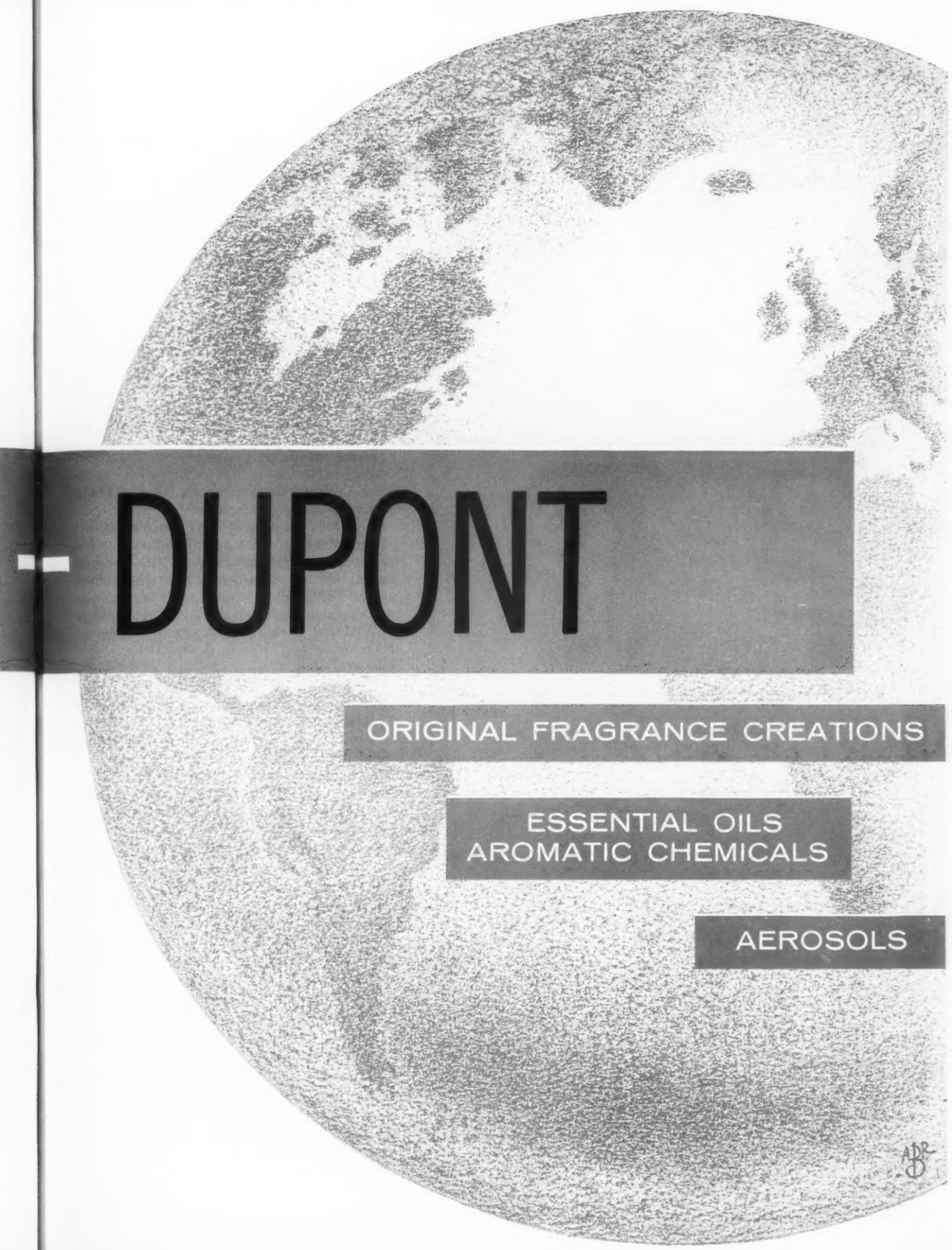
DUPONT
ORIGINAL FRAGRANCE CREATIONS
ESSENTIAL OILS
AROMATIC CHEMICALS
AEROSOLS

J. Philip Smith, right, General Manager, Chemical Sales Division and Edward F. Bouchard, Assistant Director, Technical Service Department, discuss the application of Pfizer's Vitamin A line to some industry-wide problems.

Question:

WHAT'S BEHIND PFIZER VITAMIN A?

Answer:

PFIZER TECHNICAL SERVICE.

How Some Tough Industry-Wide Problems Were Solved.

● Back in 1951 the pharmaceutical industry had a problem with Vitamin A stability in dry multivitamin preparations.

Efforts at that time to handle liquid Vitamin A in this type formulation proved extremely difficult. No way could be found that both permitted easy handling, and yet fully protected the vitamin against loss of potency through oxidation. And, in most cases special equipment was required.

At this point, Pfizer Technical Service entered the picture. This is an organization that is very mindful of the industry's troublesome problems. Consequently, the Pfizer Technical Service men often bring such problems back to be worked on by the Pfizer research and production teams.

This was the case in 1951 when Pfizer offered to the pharmaceutical industry a dry free-flowing granular form of Vitamin A in an oxidation-resistant matrix of gelatin and sugar. The product, known as Pfizer **Vitamin A Crystalets®**, solved the industry problem of Vitamin A stability in dry multivitamin formulations. (**Vitamin A and D Crystalets** also available.)

The desire to formulate bulk Vitamin A products that will help solve specific industry problems has continued through the years. Consequently, *Pfizer now has the most complete line of Vitamin A products for your needs.* Here are some more of them:

VAPAD®—An isomerized form of Vitamin A to solve the problems of instability in aqueous dispersions.

PALMILETS*—A Vitamin A Palmitate protected with gelatin to solve the stability problem in high moisture products.

VITAMIN A PALMILETS TYPE M & W—Two new dry dispersible forms of protected Vitamin A Palmitate. One is readily soluble in plain tap water, the other (Type M) in ice water. Also, *Vitamin A & D Palmilets Type M & W* now available.

VITAMIN A PALMITATE—A product to solve the need for an extremely stable form of liquid Vitamin A.

There are stable, economical Pfizer Vitamin A forms to suit all your needs.

*TRADE MARK

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Pioneer in the Manufacture of Vitamins

Pfizer

Compounder's Corner

Methoxsalen Suntanning

Experience with the oxypsoralens has established the principle that they, plus repeated exposure to natural or artificial ultraviolet rays in the wave lengths from 2500 A to 3660 A and perhaps higher, can induce pigment formation in certain areas of vitiligo. Experience also has shown that the vitiligo problem is far from solved. The clinical response is erratic and unpredictable, and cosmetically satisfactory repigmentation can be obtained in only about one out of every seven patients treated.

Side-reactions experienced by patients receiving methoxsalen orally include nausea, epigastric distress, diarrhea, increased nervous tension, headache, and depression. On the other hand, the original fear that methoxsalen might cause liver damage has not been proved in a single case.

The origin of an entirely different field of usefulness, namely, the idea of using methoxsalen to increase the general tanning of the skin for cosmetic purposes as well as to increase the general tolerance of the sensitive skin to sunlight, stems from relatively recent observations. A physician's wife being treated for vitiligo observed that ingestion of methoxsalen before exposure to sunlight substantially enhanced the tanning response of her normal-appearing skin. This finding has been confirmed repeatedly, and the drug has been recommended as an aid to suntanning.

Just how effective is this drug in increasing suntanning and tolerance to light? By what mechanisms does it achieve these effects? What are its side-effects? Is it safe for general use, continuously or repeatedly through many years?

Despite a recent report showing that the degrees of hyperpigmentation are often not very obvious or readily discernible clinically, most investigators agree that the skin of many normal persons, as well as the normally pigmented areas of many patients with vitiligo, develops some increase over the normal hyperpigmentation when repeatedly exposed to sunlight within two to four hours after ingestion of 10 to 20 mg. of methoxsalen. Moreover, some sun-sensitive subjects, including albinos, state that their skin has acquired increased tolerance to sunlight while they were taking methoxsalen. However, for achieving this effect the dosage both of drug and of sun exposure is a delicate one. For, if the first exposures to sunlight are a little too long or if the dose of methoxsalen is increased to 30 to 70 mg. daily instead of 10 to 20 mg. daily, a reaction the opposite of that desired may take place; this is, all cutaneous reactions to ultraviolet rays become accentuated, so that erythema, edema, blistering, and pain occur.

Recently progress has been made concerning the second question, that of mechanisms of action. S. W. Becker Jr. has studied the histological changes in the skin which occur after chronic oral administration of psoralens and exposure to ultraviolet radiation in normal persons (20 mg. of methoxsalen daily given two hours before exposure to ultraviolet rays). He finds that the most prominent change is a thickening of the horny layer of the skin, resulting in an extremely compact layer.

In consonance with the findings of Guido Miescher on sun protection in general, it is this increased density and thickness of the stratum corneum which appear to be largely responsible for the increased resistance of the skin to sunburn after psoralen therapy. The natural insensible desquamation of such a thickened and compact horny layer is diminished. Normally, pigment granules ascend in the epidermis and are cast off with the desquamating horny lamellae. In a compact thickened horny layer this "excretion" of melanin dust is considerably slowed down. Therefore, such skin appears darker. In Becker's presentation, if there is increased melanin formation under the combined influence of psoralens and sunshine, this is in correlation with the inflammation produced, that is, the greater the inflammation, the greater the pigment production. However, an increased tanning is achieved mainly by retention of melanin. The adherent stratum corneum retains the pigment which reaches it. In addition, a large amount of melanin is retained also in the basal-cell layer.

Although present experience indicates that most healthy adults can safely take 10 to 20 mg. of methoxsalen daily by mouth for one to two weeks to increase their tolerance to sunlight or to obtain more tanning, there still remain many unknowns. Thus, it is not known in what ways protracted or repeated ingestion of methoxsalen may affect patients with gastrointestinal disease, liver disease, or chronic infection. Moreover, concerning cutaneous ill-effects, it is not yet known what will happen to the skin when courses of methoxsalen and sun exposures are repeated once or twice or oftener each year for many years and a deeper than normal tan develops.

M. B. Sulzberger and A. B. Lerner in the above article summarized from *J.A.M.A.* 167: 2077, 1958, state that no unequivocal answers can now be given to the questions raised on the basis of any of the findings reported up to the present.

Antioxidant Compounds

Fat-soluble derivatives of vitamin B_6 including ethyl *N*-pyridoxyl-*p*-aminobenzoate, pyridoxal isonicotinoylhydrazone, and pyridoxine 5-monopalmitate showed little or no antioxidative activity for lard as well as for vitamin A at 37°C according to T. Sakuragi and F. A. Kummerow (*J. Am. Oil Chem. Soc.* 35: 401, 1958). The structurally related compounds, ethyl *N*-vanillyl-*p*-aminobenzoate, vanillin isonicotinoylhydrazone, and the nicotinoylhydrazone were found to be antioxidants although free vanillin was inactive. The removal of the electron withdrawing nature at the formyl group in a vanillin molecule might be functional in the development of antioxygenic properties.

Evidence was obtained to show that an isonicotinoylhydrazonomethyl group not only activated a phenolic compound as an antioxidant but also removed pro-oxidative metallic ions from lard through chelation. For example, 3,5-di-*tert*-butyl-4-hydroxybenzaldehyde isonicotinoylhydrazone (BHB-INH), a structural analogue of butylated hydroxytoluene (BHT), stabilized lard more efficiently than BHT on a molar basis in the presence as well as in the absence of Cu^{++}.

Gums and Light

The action of light in the presence of oxygen is responsible for several types of deterioration in cosmetic products. It induces undesirable changes in the appearance and odor of many liquid preparations when they are packed in clear glass bottles.

Light also plays a part in the decline in viscosity which sometimes occurs on aging of preparations which are thickened with certain water-soluble gums. Two of the gums used in cosmetic preparations are quite sensitive to light. One of these is sodium carboxymethyl cellulose, a chemical derivative of natural cellulose. The other is the synthetic polymer Carbopol 934.

The information relative to this gum is contained in a report by Davies and Rowson (*J. Pharm. Pharmacol.* 9:672, 1957; 10:30, 1958) on factors which affect the viscosity of aqueous dispersions of cellulose derivatives. The gums included in their study were methyl cellulose, methyl ethyl cellulose and sodium carboxymethyl cellulose. Viscosity determinations were made with the Redwood viscometer and results are expressed in terms of the efflux time.

One factor studied in the aging tests was the influence of light. Dispersions of the gums were stored in glass jars for a year at room temperature. One sample of each dispersion was kept on an open shelf while another was stored in the dark. The mucilages contained a preservative to prevent microbial degradation of the gums. In the case of methyl cellulose the changes in viscosity during the storage period were about the same for the samples exposed to light as they were for the samples stored in the dark. However, the viscosity of the carboxymethyl cellulose mucilages was affected by exposure to light. At the end of the year the efflux time of the daylight samples was only 39 per cent to 45 per cent of the original values while the efflux time of the samples which were stored in the dark varied from 62 per cent to 74 per cent of the original values.

In another aging test, dispersions of carboxymethyl cellulose showed marked losses in viscosity within a month when exposed to the maximum amount of direct daylight, but relatively small losses when protected from light. Davies and Rowson attribute the decrease in viscosity to oxidation of the carboxymethyl cellulose under the influence of light. They tested sodium metabisulfite at 0.1 per cent as an oxygen inhibitor in dispersions of the gum. However, it only produced a greater drop in viscosity on aging in the light.

Carbopol 934 is a carboxy vinyl polymer which is marketed in the acid form. It is neutralized with a base at the time it is used and produces a highly viscous mucilage. Schwarz and Levy (*J. Am. Pharm. Assoc. Sci. Ed.* 47:442, 1958) observed that gels of neutralized Carbopol 934 undergo oxidative degradation when exposed to daylight.

Viscosity determinations were made on gels containing 0.7 per cent of neutralized Carbopol 934, before and after storage for 17 days at room temperature. Samples of each gel were exposed to daylight (not direct sunlight) and duplicate samples were protected from light. After 17 days, all the samples which were exposed to light showed a pronounced decline in viscosity while the samples which were protected from light showed a slight gain in viscosity.

The gel neutralized with sodium hydroxide had an initial viscosity of 57,600 c.p.s. Exposure to daylight caused the viscosity to drop to 34,100 c.p.s.; a loss of 41 per cent of the original viscosity. The ammonium salt of the gum showed an even greater decline in viscosity (51 per cent). The gels neutralized with triethanolamine and potassium hydroxide lost 32 per cent and 34 per cent, respectively, of the original viscosity.

Schwarz and Levy tested several chemicals as stabilizers in a sodium Carbopol gel. One of these was ethylenediamine tetraacetic acid. This substance, at a concentration of 0.05 per cent, produced an initial drop in the viscosity of the gel but the viscosity remained constant when the gel was exposed to daylight for 17 days. The protection afforded is an indication that trace metals act as catalysts in the oxidative degradation of Carbopol 934.

Three antioxidants proved to be quite effective. They were thiourea (0.5 per cent), monothioglycerol (0.5 per cent) and butylated hydroxyanisole (0.05 per cent). Propyl gallate and nordihydroguaiaretic acid gave color reactions which would prevent their use in a cosmetic product containing Carbopol 934. —*Schimmel Briefs*

Ointment Bases

Eight metallic soaps have been used by R. E. Singiser and H. M. Beal (*J. Am. Pharm. Assoc. Sci. Ed.* 47:6, 1958) to produce ointment bases by gelling the following vehicles: (*a*) white petrolatum, liquid petrolatum, anhydrous lanolin; (*b*) white petrolatum, liquid petrolatum, and (*c*) liquid petrolatum. The bases were studied at 8°, room temperature, and 45°. Penetration results indicate that gels of metallic soaps with heavy liquid petrolatum produced the most desirable preparations. Consistency changes were very slight over the above temperature extremes. These ointment bases are superior to white petrolatum both in thermo-stability and elegance. Anhydrous lanolin in these newly developed bases provides water-absorption capacity which no incompatibility. These new metallic soap gels proved to be superior or equal to other gels.

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Case History No. 83-09: "For years, this well-known manufacturer of a popular shaving cream has used Emersol 120 Standard (double-pressed) with very excellent results. However, to keep their foremost position, their research group periodically evaluates competitive stearic acids. The result is always the same...their shaving cream made from Emersol 120 has better odor, requires less processing adjustments and has better keeping ability (extended shelf life). The latter factor means greater resistance to such undesirable changes during aging as rancidity, yellowing, unappealing appearance, and unsatisfactory performance, all of which discourage repeat orders."

This actual experience is only one of the many instances where the use of Emersol 120 results in tangible benefits. These same advantages apply to all products made from stearic acid and are imparted by all grades of Emersol Stearic Acids. And since they cost no more than competitive grades, you have nothing to lose and everything to gain by ordering all your stearic acids from Emery. Call us the next time you are in the market.

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Perfumer's Shelf

Eau de Cologne

Through many and varied interpretations, "eau de cologne" has become a generic name applied to many products that often have very little or no resemblance to the classical eau de cologne odor.

This fragrance, typical of the products of firms that follow the old tradition, remains an odor composition whose constituents belong to the genus citrus of the rue family. Let us analyze a classical eau de cologne of one of the well-known houses specializing in the manufacture of this fragrance. The harmonious odor complex of the following essential oils is evident: bergamot, neroli, petitgrain, lemon, rosemary, lavender, orange, etc. Other natural constitutents are also often included.

Two factors that are decisive for first-rate quality of eau de cologne are the purity of its alcohols (the classical eaux de cologne are usually 80 per cent by weight) and careful storage at even temperatures in wooden barrels for several months. Precious eaux de cologne are as carefully attended to, aged, and bottled, as French cognacs.

The eau de cologne types usually contain between 2.5 and 5 per cent of essence mixture in best grain, wine or rice alcohol.

The user of a typical, prime eau de cologne expects a light and refreshing odor which evaporates quickly, leaving only a little aftersmell. The essences typical of a classical eau de cologne are rather volatile hesperidin odors that, in fact, constitute the top notes. All attempts at the improvement of eaux de cologne through fixatives depart from the original.

A great number of fantasy eaux de cologne are strongly fixed products, some with a pronounced animal note, some with a powdery base. Some of these products, however, are really lotions that only share the name with eaux de cologne and should be classed as eaux de toilette.

At this point, we should mention that the names "eau de cologne" and "eau de toilette" (or toilet water) have been applied to various products since the original eau de cologne was formulated.

In Europe, the classical eau de cologne serves as a body freshener and as an aid in good body hygiene. It is a favorite of both men and women for its exhilarating and hygienic properties and is used by both throughout the year. During the summer months, colognes are widely used for their cooling and stimulating effect and for some occasions they have been used as a light perfume. This is true of the fancier types of eau de cologne rather than the classical version. Cologne is still used for its therapeutic effect but this application is slowly disappearing.

Until a few years ago, European men used only eau de cologne and lavender water. Although this situation is changing, men still make up a large percentage of the European cologne market.

The development of "eau de toilette" abroad can be traced, in part, to the higher prices of the extracts which the general public could not afford. Originally only facial waters and waters for skin care were called eaux de toilette, while today the name refers to dilute solutions of an original extract (5-7.5 per cent of essence in 70-80 per cent alcohol).

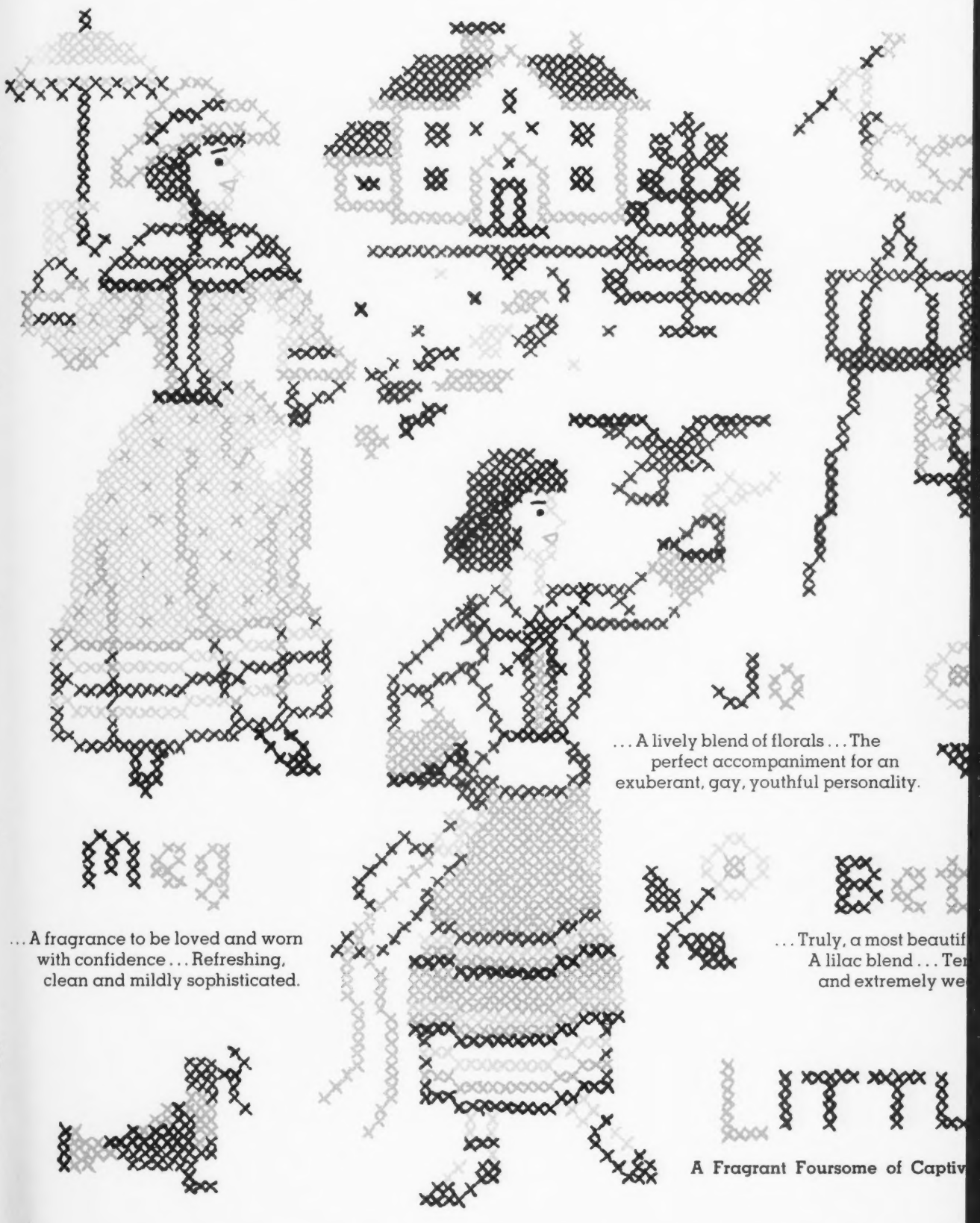
In the United States, the names "cologne" and "toilet water" are used almost interchangeably and some women use either of these products in place of a perfume extract. Colognes and toilet waters are usually offered as alcoholic solutions of an original extract or as less expensive versions of it. Some American firms still use the term "cologne" to refer to the citrus and flower oil products and use "toilet water" to describe a diluted version of a perfume extract. Otherwise, cologne and toilet water differ only in the degree of dilution, and to add further to the confusion, there is a difference among some producers as to which of the two is more concentrated.

Classical eau de cologne formulas call for the use of natural oils, the bulk of which are either distilled in Grasse or compressed in Messina. In today's essential oils market, these oils are subject to high prices and constant fluctuations. The perfume industry, therefore, has attempted, for quite some time, to develop highgrade substitutes and supplementary products for the manufacture of eaux de cologne. Today, a large number of different synthetic products, specialties and bases for the manufacture of eaux de cologne are available to the perfumer. —R. M. Classen, *The Giavaudanian.*

Cyclopentadiene Aromatics

Roure-Bertrand Fils and Justin Dupont, in their publication "Recherches," describe a number of chemical products obtained from cyclopentadiene. This substance is known to be very reactive in the Diels-Alder condensation and the compounds described may be useful in perfumery.

The ketone, obtained by condensation with acrolein, followed by reaction with acetone, has an intense and tenacious green odor with a slight cumin note. Condensation of the above Diels-Alder compound with methyl ethyl ketone gives a ketone with a less green odor, a res-



... A fragrance to be loved and worn with confidence ... Refreshing, clean and mildly sophisticated.

... A lively blend of florals ... The perfect accompaniment for an exuberant, gay, youthful personality.

... Truly, a most beautif
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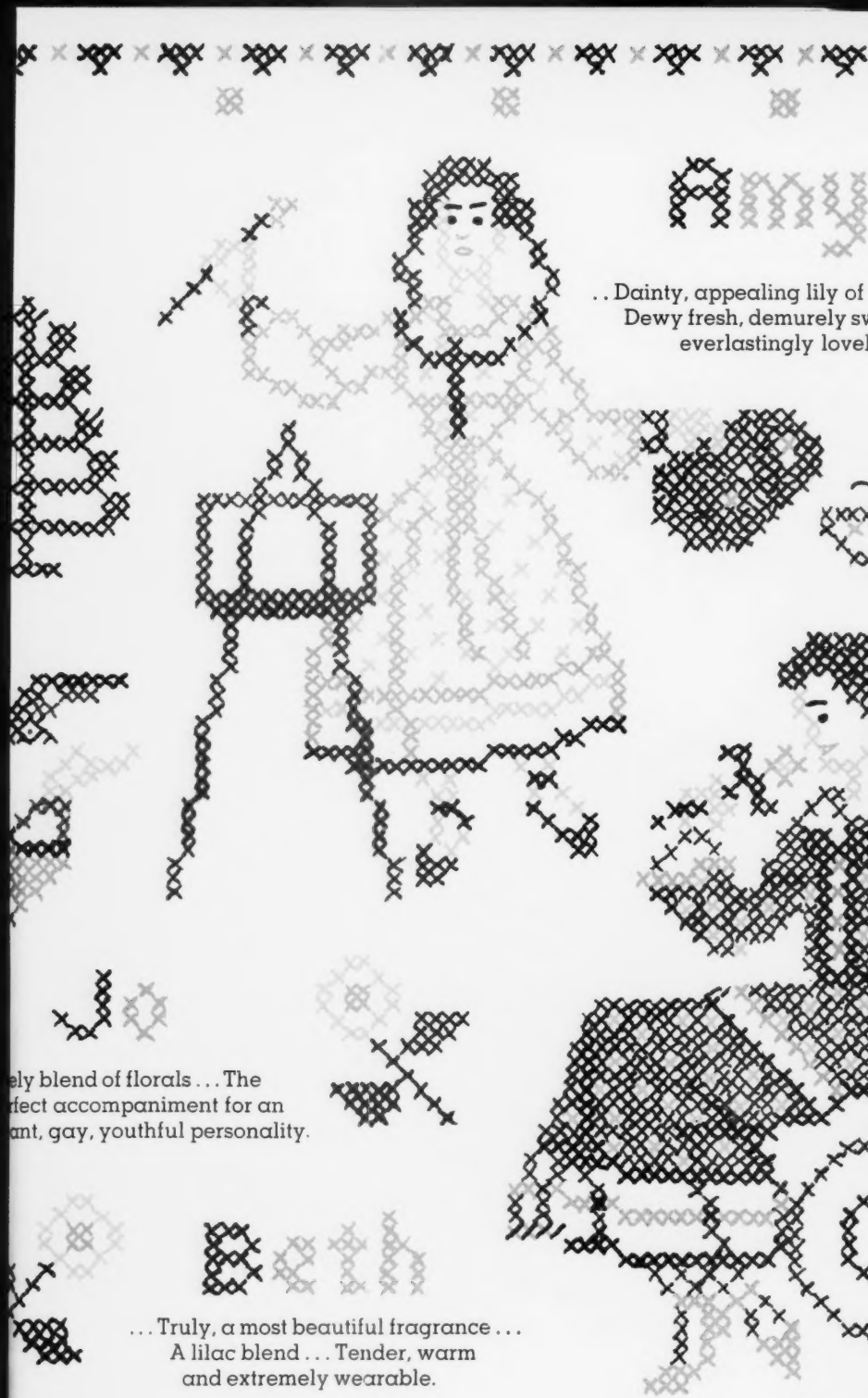
A Fragrant Foursome of Captiv



. . Dainty, appealing lily of
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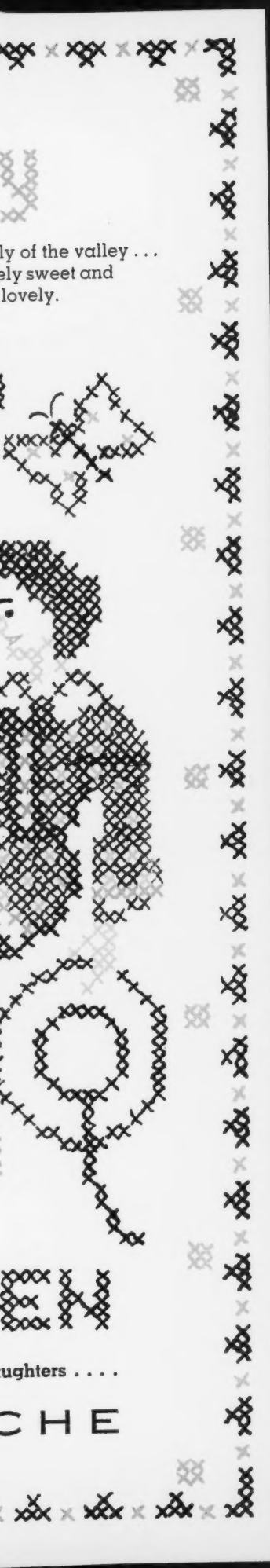
. . . Truly, a most beautiful fragrance . . .
A lilac blend . . . Tender, warm
and extremely wearable.

LITTLE WOMEN

A Fragrant Foursome of Captivating Perfumes for Milady's Growing Daughters

BY FRITZSCH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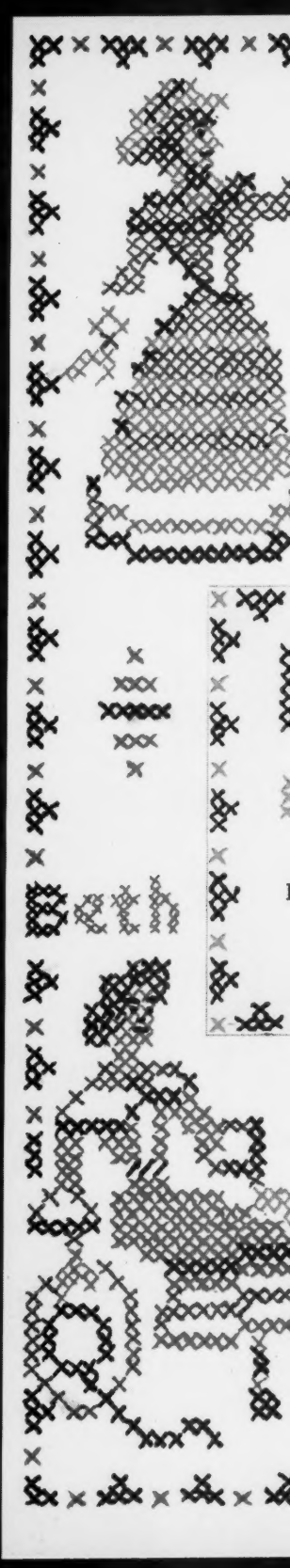

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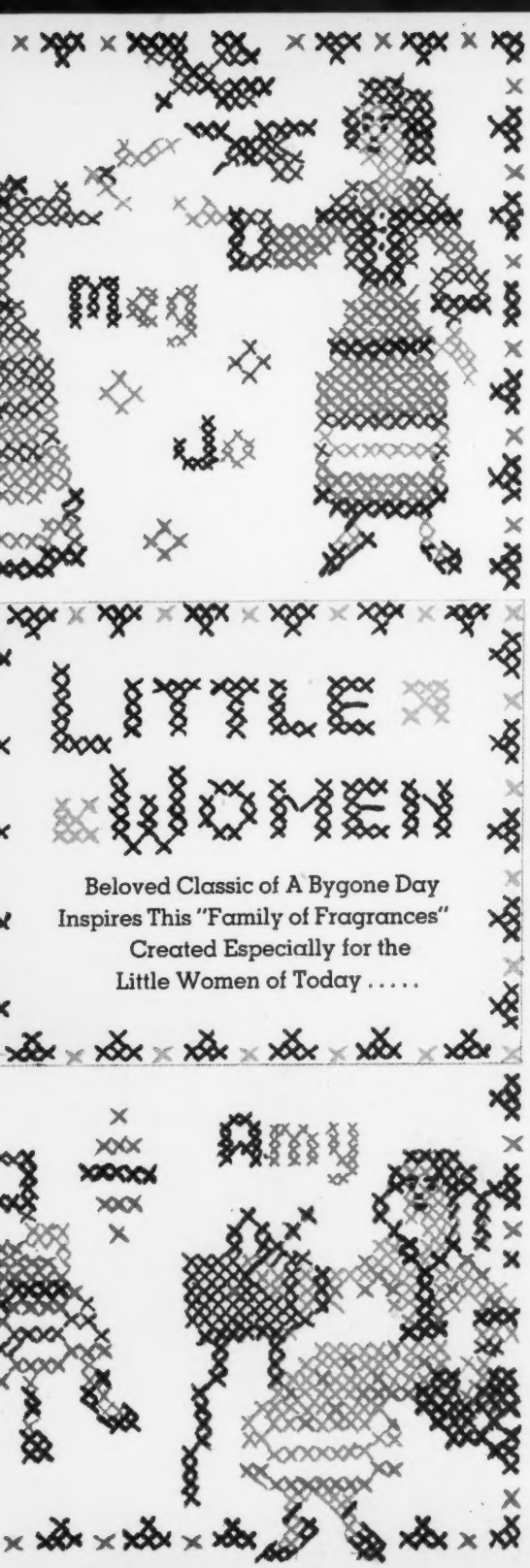
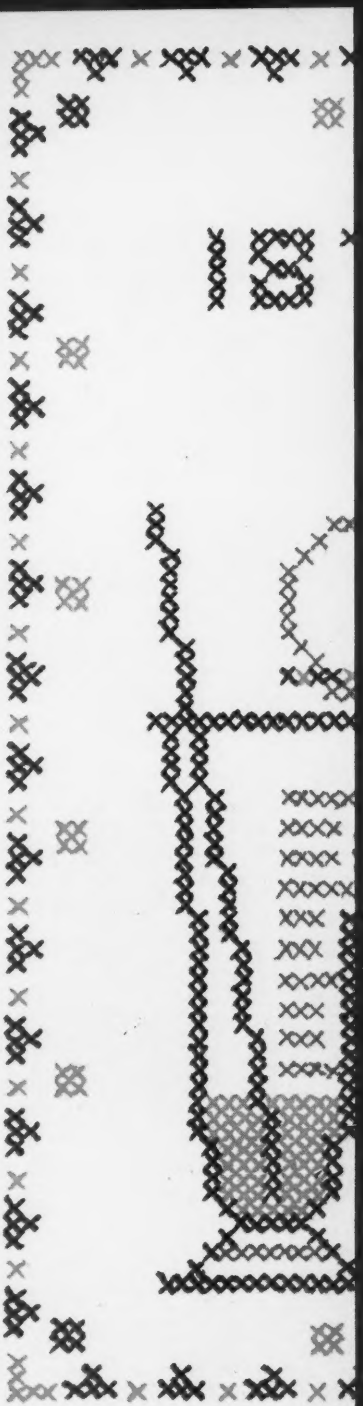
*MEXICO, D. F., AND *BUENOS
CLIFTON, N. J., AND BUENOS





SINCE 187

ITZSCHE
THERS, INC.
VENUE, NEW YORK 11, N.Y.

AND *STOCKS: ATLANTA, GA., BOSTON,
L., CINCINNATI, OHIO, GREENSBORO, N. C.,
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EST. 1871

SINCE 1871...

Embroidered samplers – now collectors' items – are cheerful reminders of the era in which FRITZSCHE was founded. In that 87 year span, FRITZSCHE has grown strong and has prospered. It has steadily accumulated and multiplied its resources in experience, scientific understanding and knowledge. It is ready and eager at all times to share these resources in solving its customers' fragrance and flavoring problems.

FRITZSCHE BROTHERS, INC.

76 NINTH AVENUE, NEW YORK 11, N. Y.

inous nuance and a more marked cumin note. The glycol acetal of the aldehyde from cyclopentadiene and acrolein has an earthy odor of gentian root. The diethyl acetal of the same aldehyde has a "calvados" note in dilute alcoholic solution, but its use is difficult because of its "violence." Cyclopentadiene and crotonaldehyde, followed by condensation with acetone, give a ketone with a very tenacious green and powdery note with a cumin nuance. The acetate obtained from the alcohol made by condensing cyclopentadiene with allyl alcohol has a rhubarb odor while the nitrile from a diene synthesis with acrylonitrile has an odor of pyridine or benzoxazole.

Rose Perfumes

Phenyl benzoate has a sweet rose-geranium note when used in toilet soaps. It is fresh, has good "lift" and persistence, and is slightly honeyed in character. The effect that it gives is clearly shown when using 0.5 per cent, dissolved in benzyl benzoate. Benzophenone, similarly incorporated, has a much more pungent, fuller and rather deeper odor. In some kinds of rose perfume for soaps, these products may be regarded as complementary.

Methyl benzyl ketone has an attractively smooth green leaf note that blends well into certain soap perfumes: rose, spring flower bouquets and the lighter, less ferny types of lavender. It does not appear to last so well, however, on the surface of unwrapped soaps.

—*S. P. C.* 31:871, 1958

Transparent Brushless Shave

U. S. patent 2,833,693, issued to George M. Naimark describes a transparent shaving preparation of the brushless type taking the form of a water-white easily spreadable jelly consisting of 1.5 per cent to 3.5 per cent of a pharmaceutical grade sodium carboxymethyl cellulose of the high viscosity type, 5 per cent to 10 per cent of a polyol selected from the group consisting of glycerol, propylene glycol and d-sorbitol, 0.5 per cent of a surface-active agent having beard-softening properties, a cosmetic preservative, soluble in water, and water, the jelly being transparent, physiologically inert, devoid of graininess, free of any tendency to attack common metals, of a consistency such that it will not only flow from a collapsible tube under pressure but will maintain its form upon being released from the tube, and characterized by a pH in the range between 6 and 9.

Hair Waving Patent

Paul C. Watson has been issued U. S. patent 2,836,543 for a hair-waving composition containing sulfite, a nitrogen compound and a substituted aromatic compound.

The liquid for setting hair at temperatures between about 20 and 40° C. without effecting any appreciable injurious swelling of the hair is an aqueous solution of an alkali metal bisulfite, urea and gentistic acid, the pH of the composition being adjusted to between 6 and 7. The alkali metal bisulfite is present in a concentration equivalent to 3 to 6 per cent SO_2 by weight, urea being present in a concentration equivalent to from about 15 to 40 per cent by weight and gentisic acid being present in an amount equivalent to from 1 to 4 per cent by weight, the combined solubility of alkali metal bisulfite, urea and gentisic acid being such that no appreciable salting out will occur on hair at temperatures above about 20° C.

Antacid Composition

U. S. Patent 2,836,540, issued to Leo L. Hardt, describes a pharmaceutical antacid composition intended to provide prolonged antacid action, to reduce the possibility of acid rebound and to provide adsorbency and a protective coating. The composition consists of a mixture of an alkali metal alginate, alkaline earth carbonate, aluminum hydroxide, magnesium trisilicate and the protein fraction of oat grain.

New Sulfa Drug

Madribon, a new sulfa drug with the formula 2,4-dimethoxy-6-sulfanylamido-1,3,-diazine, has been introduced by Roche Laboratories, Division of Hoffmann-La Roche Inc. It was first synthesized in 1955 and has since undergone extensive clinical trials in both the United States and Europe.

In preliminary trials, 302 hospitals employed the drug in nearly 5000 patients. Findings in these investigations show that good to excellent results were obtained in approximately 85 per cent of the patients with upper respiratory, systemic and urinary tract infections. In most cases, a single low dose was administered once a day. Less than 3 per cent of the patients experienced side effects such as nausea and vomiting. Since about 80 per cent of the drug is excreted as the highly soluble glucuronide rather than the relatively insoluble acetyl form, crystalluria or kidney damage is unlikely. The glucuronide retains some antibacterial activity.

Salicylate Potentiation

Addition of the muscle-relaxing drug, mephenesin, to salicylate tablets provides pain relief to a greater number of arthritis victims with fewer unpleasant reactions than aspirin or sodium salicylate given alone.

This potentiation of drug effectiveness was reported to the annual meeting of the American Therapeutic Association at the Mark Hopkins Hotel by Drs. Robert Batterman, Julius Carr, and George J. Mouratoff of New York Medical College-Flower and Fifth Avenue Hospitals. They could offer no explanation of why the muscle-relaxant speeds salicylates to the site of arthritic pain but they found salicylate blood levels were increased by the combination. They also said that administration of the compound, called Mephosal, results in more rapid appearance of salicylate in the bloodstream than occurs when aspirin alone is given.

They gave Mephosal (500 mg. sodium salicylate with 500 mg. mephenesin) to fifty-nine arthritic patients who had been under observation for some time at the hospital's arthritis clinic. Forty-one got good relief of pain and seven of the fifty-nine showed minor side reaction.

Vistaril (Pfizer) is a psychotherapeutic agent, p-chlorobenzhydryl diethylene diamine derivative linked to pamoic acid (methylene-bis-hydroxynaphthoic acid), generic name hydroxyzine pamoate, for the treatment of tension and anxiety, more severe behavior disturbances including overt psychoses and in aborting cardiac arrhythmias. The product is available as 25, 50 or 100 mg. capsules or 10 cc. vials containing 35 mg. in each cc.

(*Continued from page 451*)

each year without a single, individual characteristic difference. These are not imitations or duplications—they just ain't.

5. *Overpromises.* Some people never learn. They either think the customer is a dope or they are typical one-call Charlies. The amount of effort spent on promises that simply can't be delievered, or tongue-in-cheek promises could build a dozen honest, lasting businesses.

6. *Package or dispenser failure.* Some because of haste or enthusiam, some because of unvarnished inability to understand the essential need for careful testing, some because of plain hard luck and some because they are not fundamental enough to hold customer approval on repeated use. Nevertheless, a useful and promising field for creative energy.

7. *Inexperience in marketing.* There are at least 25 orthodox ways to introduce a new cosmetic. Ingenuity of new comers have discovered countless unorthodox ways now recorded in history. This is not an important reason for product failures, but there have been marketing bloomers that were beauts.

8. *Products alien to a product line.* This is a pretty abstract classification, where no one can point the finger as a cause of failure. Nevertheless, if you believe that there is such a thing as a company and brand image, and if you believe that a clearly defined image is important, then you do have to wonder when a fine fragrance house makes a drive for a deodorant specialty, or the like.

9. *Lack of capital.* A classification that needs no comment beyond saying that this industry gets more than its share of earnest individuals, deeply in love with their own products, steeped in marketing ignorance and with no dough.

10. *Short-lined seasonal gift or promotion products.* Like the flowers that bloom in the spring, tra la.

Probably there are other reasons for product failure. There must be—we have so many.

SQUIBB CANCER RESEARCH

(*Continued from page 434*)

pounds have already been screened and new ones enter the program at about the rate of 40,000 annually. Few turn out to be good enough for clinical trial. Compounds with some temporary growth-retarding effect on some types of cancer in man have been found in the following groups:

Polyfunctional alkylating agents which can attach to living tissue to destroy it or inhibit further growth;

Antimetabolites which interfere with the processes of cell metabolism and thus retard or reverse growth;

Steroids which may act to control the growth-regulating functions of other steroid hormones;

Other compounds difficult to classify, but having varying degrees of effectiveness.

As a whole, there is real step-by-step progress to report: diagnostic methods have improved; survival time has increased significantly; and more patients are recovering completely.

Squibb research is certainly not wholly devoted to the cancer problem. Some of the current research project categories are the search for new steroids obtained by chemical and microbiological methods for anti-inflammatory and anti-allergic action, as well as for other disease states; research for new antibiotics with broad and with specific antimicrobial activity continues. Particular emphasis here is placed on the therapy and prophylaxis of virus diseases, with or without a relationship to cancer. A substantial program is devoted to the search for antipsychotic, mood-elevating and anti-tension or anxiety-relieving agents; the atherosclerosis problem is being attacked through the synthesis and evaluation of drugs that may be applicable. Fermentation research is being pushed to develop new chemicals with unusual and valuable medicinal properties.

PFIZER CANCER RESEARCH

(*Continued from page 435*)

12 under the direction of William S. Marsh processes the samples, identifying the micro-organisms they contain, maintaining a culture collection of these organisms and putting promising-looking organisms to work fermenting broths.

Maywood screens broths, too, and keeps a running population on chemotherapy of approximately 8,000 mice for the purpose under the supervision of Dr. J. J. Oleson. The animals are coddled even more than the human operators, for one of the great dangers in maintaining a mouse colony is epidemic infection; this can shut down research for weeks.

The mice are implanted with three different tumors designated Ca 755, S180, and L1210. Against these, approximately 15,000 to 20,000 tests will be made each year. From past experience, the research workers can expect about one to two per cent of the broths to show some activity against one or more of the three tumors.

In addition, the Memorial maintains a rat colony into which have been transplanted human tumors, called HS-1 and HEP-3. Selected broths will be tested against these tumors, to discover whether or not these human tumors will find active compounds that are not detected in the mouse tests. This aspect of the work is also under Dr. Oleson's direction.

After SRI, Hazleton or Sloan-Kettering reports a broth to be active it must be fractionated to isolate the active principle or principles. This procedure involves from 200 to 1,000 additional tests per broth. These fractions are supplied by a staff of organic chemists under the direction of Dr. K. V. Rao. When tests are added to the total, it comes to 46,000 tests per

(*Continued on page 530*)

Givaudan gives you experienced help in perfuming men's toiletries

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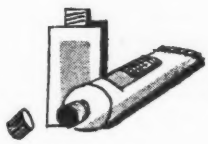
*Roche Reg. U. S. Pat. Off.



Advancing Therapy

Chlorpropamide Antidiabetic Drug

Diabanese, the trade name for chlorpropamide, a new oral antidiabetic drug, was found to be effective in a wide variety of diabetic situations, clinicians reported at the Conference on Chlorpropamide and Diabetes Mellitus, held at the Barbizon-Plaza Hotel under the joint sponsorship of the New York Academy of Sciences and Chas. Pfizer & Co., Inc.

Chlorpropamide is two to three times as powerful as other available oral drugs against diabetes. Only small doses are required and is often effective where other oral preparations have been or become ineffective. The small doses keep undesirable side effects at a minimum.

Sixty-five clinical papers were presented during the Conference by scientists from 19 countries, including the United States, Canada, Mexico, France, Denmark, Scotland, Germany, Austria, Lebanon, Cuba, Chile, Argentina, Peru, Venezuela, the Philippines, Australia, Malaya, Italy and Portugal. The sessions wound up with a summary by Dr. Charles H. Best, director of the Best Institute in Toronto and the co-discoverer (with the late Dr. Frederick G. Banting) of insulin, the first and still the most effective drug against diabetes.

A group of 68 patients given Diabinese for periods up to eight months responded well to the drug, according to Dr. Samuel Sugar and associates of the George Washington University Division, District of Columbia General Hospital, and Prince George's General Hospital, Cheverly, Md. Of 28 diabetics who could be controlled with insulin, or partially controlled with diet, 19 (68 per cent) did well on chlorpropamide alone, according to Dr. Sugar.

Also included in the study group were 31 patients who had initially been well controlled by tolbutamide, at present the most widely used oral anti-diabetic drug, but who had developed resistance to this agent. Of these, 21 (again 68 per cent) responded to chlorpropamide, Dr. Sugar found.

The higher potency of chlorpropamide over tolbutamide was confirmed by a team headed by Dr George J. Magid of the University of California Medical School in San Francisco. These studies, on three normal subjects and 20 diabetics, revealed that the new drug was more than six times more potent than tolbutamide in maintaining low blood sugar levels in prolonged treatment. It remains in the blood nearly 10 times as long as does tolbutamide, Dr. Magid added, and effective daily doses are only a third as large as the tolbutamide dosage required.

The persistence of chlorpropamide in the blood, and the slow rate at which the body excretes the drug, permits some patients to control their diabetes on an intermittent schedule, according to Drs. Farid Fuleihan and Calvin H. Plimpton of the American University of Beirut, Lebanon. In these cases, Dr. Fuleihan reported, a single dose has been found to keep blood sugar levels in the normal range for as long as 72 hours.

A report on the discovery and chemical and physical properties of chlorpropamide was offered by two teams of chemists headed by Drs. W. M. McLamore and Thomas J. Toolan, both of Pfizer, which developed the drug. Tests on its biological activity and safety were described by Dr. Jurg A. Schneider and associates, also of Pfizer. Experiments aimed at discovering precisely how the drug affects the chemical economy of the body tissues and organs were reported by Dr. D. W. Clarke of the University of Toronto, by Dr. Martin D. Sass of the Veterans' Administration Hospital in Brooklyn and Dr. Milton B. Handelsman of the State University of New York, and by a Harvard Medical School group led by Dr. Albert Renold.

New Steroid Hormones

Decadron, ultrapotent new steroid hormone first announced by Merck Sharp & Dohme Research Laboratories last June, is continuing to show excellent results in one of the most extensive programs of clinical testing ever undertaken by a pharmaceutical company, according to Dr. Augustus Gibson, executive director of medical research.

Dr. Gibson, giving an interim summary of the data received from seventy of more than a thousand U. S. and foreign physicians who have already received test supplies of Decadron, said that the new drug was living up to its early promise of providing greatly increased anti-inflammatory power with generally milder side effects than the steroid hormones now commonly used. These indications are expected to be further confirmed by a clinical testing program soon to cover some 1,700 physicians, who should report on an estimated 20,000 patients. So extensive is the program that an elaborate new electronic computer is being used to aid in the analysis of its findings.

Case studies on some 1,200 patients show that the new steroid has an average potency some thirty-five times that of cortisone, some seven times the potency of such later cortisone analogues as prednisone and prednisolone, and about five times that of 6-methylprednisolone and triamcinolone.

In an analysis of the side effects of Decadron and other steroid hormones, Dr. Gibson emphasized that

the new drug did not eliminate all the unpleasant and sometimes serious complications that a small percentage of patients have experienced with steroid hormonal therapy in the past. However, he remarked that Decadron not only seems to maintain the gains already made by other analogues in reducing these side effects, such as the effective elimination of salt retention and consequent swelling, but also appears to have made headway against such unwanted complications as the occasional tendency to precipitate or worsen diabetes and cause undesirable central nervous system effects.

A new series of potent anti-inflammatory steroid hormones, known as 16-beta-methyl compounds, has been synthesized by research chemists of the Merck Sharp & Dohme Research Laboratories.

The five compounds are the 16-beta-methyl derivatives of the parent steroids cortisone, hydrocortisone, prednisone, prednisolone, and 9 - alpha - fluoroprednisolone. Their synthesis was reported in the *Journal of the American Chemical Society* by Dr. David Taub, Robert D. Hoffsommer, Harry L. Slates, and Dr. Norman L. Wendler of the MSD Research Laboratories.

The new steroids are closely related chemically to the potent group of 16-alpha-methyl steroids reported earlier by the same laboratories. 'Decadron' is the most potent of the 16-alpha-methyl group.

Cough Preparations

The symptomatic treatment of cough according to J. L. Paterson (*Pharm. Journal*) may be based on the provision of a soothing application locally to the irritated membranes of fauces and pharynx, the reduction of the initial period of dry irritating cough by stimulation of the respiratory secretions with substances acting as expectorants, or the raising of the threshold of the cough center by means of antitussives exercising a selective depressant effect on the center so that a more powerful stimulus is required to trigger the reflex. Relief is often obtained if an increased flow of saliva is encouraged by hot beverages, candy (medicated or otherwise), citrus juices or citric acid. The local action of demulcent cough mixtures is based upon similar principles.

In the case of cough medicaments and particularly of expectorants, lack of precise pharmacological knowledge and techniques has left the choice of remedies unaltered for more than half a century. The commonly used expectorants consist of a wide variety of substances, together with syrups and flavoring agents in a vast number of combinations claimed to increase the secretions, liquefy sputum and facilitate expectoration. These substances may be classified according to their presumed mode of action. The major group consists of gastric irritants which have a slow emetic action with prolonged nausea, and it is held that these, if administered in sub-emetic doses, produce sufficient gastric irritation to incite a reflex increase in the respiratory secretions. Ammonium chloride, ammonium carbonate, antimony tartrate, ipecacuanha, squill, and senega are all used in this way. Other commonly used expectorants, such as balsam of tolu, terpenes, creosote, guaiacol, bromoform and the iodides, owe their reputation to the belief that, in addition to a gastric irritant action, they are, after absorption, partly excreted by the bronchial mucous glands where they act as local irritants, and so increase the secretions so that the sputum is rendered less viscous.

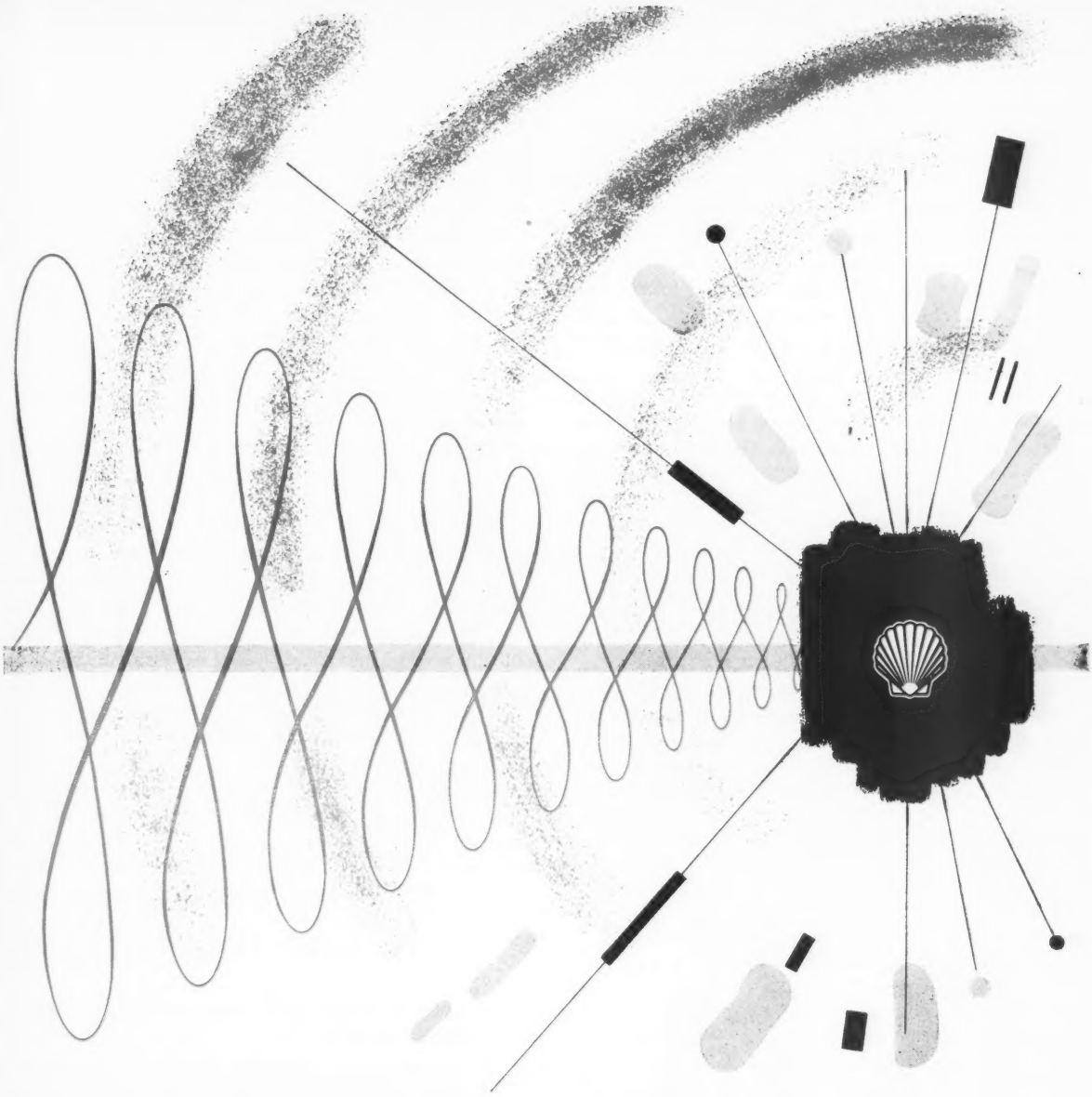
It seems probable that emetic substances in general can have little effect on the respiratory secretions unless administered in doses sufficient to produce actual vomiting or sustained nausea.

Another mode of treatment particularly applicable to advanced chronic bronchitis and bronchiectasis, is the use of aerosols. In a series of experiments it was shown that provided an efficient nebulizer was used, solutions of detergent aerosol, sodium bicarbonate and normal saline gave equivalent reductions in sputum viscosity when similarly administered. This suggests that the effect is due to simple hydration of mucoid sputum and that a comparable effect could be obtained by the inhalation of steam, either unmedicated or medicated with, for example, compound tincture of benzoin

Although the abilities of the medicaments commonly used to increase the respiratory secretions, and so facilitate coughing, are controversial, there is evidence to support the use of antitussive drugs.

The recent introduction of a number of new antitussives is prompted by the desire to obviate side reactions. These drugs include morpholinylethylmorphine (pholocodine), now extensively used for the control of non-productive cough in a variety of conditions. Its antitussive potency, which compares favorably with that of diamorphine and is superior to that of codeine, offers considerable advantages over these drugs. Pholcodine is no more likely to cause addiction than codeine; it is appreciably less toxic and is employed in smaller doses. Its depressant effect on the alimentary tract is much less than those of other morphine derivatives, and it is well tolerated by infants and young children. Recent investigations have shown that one of the *iso*quinoline derivatives of opium, narcotine (noscapine) has a specific antitussive effect coupled with a mild spasmolytic action similar to that of papaverine and a stimulatory effect on the respiratory center. These properties, combined with a low toxicity and freedom from constipating effect, suggest the use of narcotine as an antitussive in chronic bronchitis complicated by mild bronchospasm. Another series of antitussive drugs include Taoryl and Toclase. These antitussives are closely related to caramiphen, which has been extensively used in the treatment of extra-pyramidal disturbances accompanied by exaggerated muscular tone.

Unlike the morphine alkaloids, these antitussives are capable of inhibiting the cough reflex without producing a general sedative action or effect upon the alimentary tract. However, they produce a surface anasthesia of mucous membranes (Toclase is approximately two and a-half times more potent than procaine) which may be exploited in conditions of pharyngeal irritation. The advantages of these drugs in the treatment of non-productive cough in the active patient are their low toxicity, their freedom from hypnotic and constipating action even after prolonged administration and their efficiency in low dosage. 2 - 6 - Ditertiarybutylnaphthalene monosulfonate (Becantyl) and (+)-3-methoxy-methylmorphinan hydrobromide (dextromethorphan, Romilar) have actions on the cough center similar to the caramiphen series.



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SHELL

(*Continued from page 446*)

cosity of the batch. Agi-mixers are used in the emulsifying step, which is divided into water and oil phases.

Emulsifying. The first step is to blend demineralized water and a mixture of emulsifiers and thickeners in the 1000 gallon stainless steel mixer. The jacket of the mixer is filled with steam and the mixture heated until it reaches a temperature of 185° F.

While the water phase is being readied, the oil phase is being prepared in side kettles. A mixture of mineral oils, cholesterol waxes, pigments, alcohol, stabilizers and emulsifiers is pre-mixed by a propeller agitator and heated to 185° F.

When both phases are pre-mixed and heated to proper temperature, a small portable positive pressure pump is utilized to draw off the contents of the side kettles into the agi-mixer. The 900-gallon batch is then ready for the final step of the emulsifying process.

Agi-Mixer Shears Agglomerates

Ingredients to be mixed vary in viscosity and particle size and here the specialized design features of the unit function to produce stable mixtures.

The mixer consists essentially of two mechanisms, a high speed, high shear rotor-stator homogenizing head, and a paddle mixer assembly. These two mechanisms can be operated simultaneously or independently of each other and have different functions.

Paddle Mixer. With the ingredients at 185° F., the paddle mixer works material progressively downward from the outermost areas of the mixing vessel to where it is drawn in by the powderful pumping effect of the homogenizing head. Fresh material is thus fed constantly until blending is complete.

Homogenizing Head. The high speed rotor-stator in the head draws unrefined material from the bottom of the kettle, forces it to pass through restricted clearances of the mechanism, and then ejects it upward against a deflector plate. This cycle is continuously repeated until the material is properly refined. A typical lotion will require about 25 minutes for thorough blending.

Homogenizing Principle. As the unrefined material passes through the restricted clearances of the high-speed rotor-stator, it is subjected to forces of mechanical impact and hydraulic shear, which reduce the material to discrete particles suspended in liquid.

Particle reduction has important effects in cosmetic production. The increase in reacting area increases the action of the emulsifier in preventing separation of the water and oil phases. Less emulsifier is required and, consequently, manufacturing costs are lowered. Breaking down of agglomerates and fine

(*Continued on page 520*)

May We Put Some in Your Hands?

The Century Brand Oleic Acids pictured have the following properties:

	Century 1050 L P White Oleic Acid	Century 1010 Distilled Oleic Acid
Maximum color, Lovibond	5Y/0.5R—5¼"	15Y/3R—1"
Acid value	197—203	195—201
Saponification value	198—205	197—203
Unsaponifiable content	1.5% max.	2.0% max.
Polyunsaturates	3% max.	

We would like you to see our Oleic Acids and compare them critically with other competitive products, so you may fully appreciate Century Brand quality. We invite your comparison of Century Brand Oleic Acids because only you can realize their advantages in *your* products.

A request to Dept. H-44 for samples will receive prompt attention and we will welcome the opportunity to put these better products in your hands.

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Skin Research

Skin Lipids

A procedure for extracting relatively large quantities of human skin lipids is presented by J. A. Tingstad et al (*J. Am. Pharm. Assoc. Sci. Ed.* 47: 187, 1958). The lipids collected were found to vary significantly with the season of the year. Successive extractions within a short time (two hours and also two days) did not alter the composition of the lipids, nor did extractions performed every two days alter the amount of lipids collected. The lipids from the arms were found to be quite similar to those obtained from the back. The lipids were found to be quite stable if stored at temperatures below 10°. A countercurrent extraction procedure for the fractionation of skin lipids is presented. Fatty carboxylic acids and esters of those acids, which absorb in the 5.85 and 5.75-micron regions, respectively, of the infrared spectrum, are deemed responsible for the observed seasonal variations in human skin lipid composition.

Sebaceous Secretion

Experiments described by A. M. Kligman and W. B. Shelley (*J. Invest. Dermatol.* 1958, p. 99) negate the concept that the surface lipoids control the output of sebum by the sebaceous gland.

The major quanity of sebum on the forehead is produced by a unique type of pilosebaceous unit which is essentially a huge gland with a rudimentary hair; the sebum which issues from these sebaceous follicles is clear and fluid, resembling sweat. Droplets of preformed sebum can be expressed by strong compression.

The muscles of piloerection are unable to propel sebum to the surface.

A hypothesis is offered to account for the fact that a greater quantity of lipoid is collectable during a given time interval with repeated as compared to single removals. The stratum corneum is visualized as a wick attracting sebum out of the follicular reservoir by capillary action.

The concept that sweating promotes the delivery of sebum was not sustained by controlled experimentation. Emotions were not found to influence the output of the sebaceous glands.

Percutaneous Absorption

Salicylic acid, sulfanilamide, copper acetyl-acetonate and copper sulfate, when applied in lard, Emulsifying Ointment B.P. and water, as a 5 per cent carboxymethylcellulose gel, to the intact skin of rabbits enter the circulation in measurable quantities according to D. H. D. Gemmell and J. C. Morrison (*J. Pharm. & Pharmacol.* 10: 553, 1958). The order of efficiency of vehicles or bases as "carriers" remained as found previously; lard proved to be the most efficient and water, as a 5 per cent carboxymethylcellulose gel, to be the least efficient. It seems that the physicochemical nature of the applied drugs is of the greatest importance in dictating absorption through the skin. Indeed, it is surprising that the differences in absorption of each drug from water, emulsifying ointment and lard are so small.

The differences in the amounts of drugs absorbed from the three bases may be explained in terms of their local actions and lipid solubilities. Whether other pharmacological properties play a part in the absorption of drugs is a question for further enquiry. Others have suggested that the known irritant and keratolytic action of salicylic acid may influence absorption. Certainly localized vasodilatation was observed after removal of the salicylic acid preparations from the backs of the animals. Sulfanilamide is neutral and appears to exert neither an irritant nor an astringent effect when applied topically and probably produces no reactions which would be expected to increase or decrease percutaneous absorption. In contrast, copper is astringent and is used locally for its precipitant action on proteins. Whether this action influences the absorption of copper is still unknown. The slightly higher concentrations of copper acetyl-acetonate may be due to the nonionic character of the copper which is chelated with acetyl-acetone molecules increasing its lipid solubility in contrast to the lipid insolubility of the sulfate and so facilitating penetration to the dermal blood supply since passage through the sebum, a mixture of triglycerides, free fatty acids, unsaponifiable matter and cholesterol, at the bases of the follicles may be simplified.

In the present experiments maximum absorption occurred when the drug was presented to the intact skin in an oil phase. Accepting the view that penetration takes place by way of the appendages and that the final barrier to the dermal blood supply is lipoid in nature, greater absorption would be expected from an oil phase miscible with the skin glycerides and fatty acids and not repelled by this barrier. It may be further postulated that if the mechanism of absorption through the skin depends on the partitioning of the drug across this barrier, drugs which are lipid soluble will be absorbed more rapidly than those which are lipid insoluble. The low levels of absorption from water, as a 5 per cent carboxymethylcellulose gel, support the view that absorption through intact rabbit skin is enhanced when the drug is presented to the skin in an oil phase.

(*Continued from page 433*)

TABLE 4
VITAMIN A AEROSOL FOAM

CONCENTRATE	
Vitamin A (as Palmitate in Corn Oil)	2,000 u/gm
Vehicle	*Percent Weight*
Double Pressed Stearic Acid	2.6
Acetylated Lanolin Alcohols	1.5
Glyceryl Monostearate	3.0
Polyoxyethylene Sorbitol Monolaurate, U.S.P.	3.0
Triethanolamine, U.S.P.	2.0
Propylene Glycol, U.S.P.	3.0
Preservative	0.1
Perfume	0.2
Water, q. s. to	100.0
FILL	
Concentrate	90.0
Propellent 12/114 (40/60)	10.0
PACKAGE	
6-ounce Crown Spra-Ttainer (lacquer-lined)	
Clayton Foam Valve	

VITAMIN A STABILITY	*Potency Retained, based on theoretical*
	%
Initial	100
3 mo. at 43°C.	95
6 mo. at R.T.	95

TABLE 5
NEOMYCIN, POLYMYXIN, HYDROCORTISONE AEROSOL

CONCENTRATE	*Per Gram*
Neomycin, U.S.P.	3.5 mg.
Polymyxin, U.S.P.	4,000 Units
Hydrocortisone, U.S.P.	10 mg.
Vehicle	*Percent Weight*
Anhydrous Lanolin, U.S.P.	0.45
Stearic Acid, U.S.P.	6.86
Cetyl Alcohol	0.45
Span® 80*	0.45
Tween® 60*	2.75
Sorbo®*	4.90
Water, q. s. to	100.00
(*Atlas Powder Co., Wilmington, Delaware)	
FILL	
Concentrate	90.0
Propellent 12/114 (15/85)	10.0
PACKAGE	
Wheaton S-32F1 plastic-coated glass bottle (10 ml. practical fill)	
Risdon 4935-28 gold-anodized valve with 4935-EF4 actuator	

STABILITY	*Potency Retained, based on theoretical*			
	Initial	*2 mo. at 43°C.*	*6 mo. at R.T.*	*15 mo. at R.T.*
	%	%	%	%
Hydrocortisone	125	102	105	85
Neomycin	110	108	89	82
Polymyxin	107	91	106	76

TABLE 6
NEOMYCIN, POLYMYXIN, HYDROCORTISONE NITROSOL

CONCENTRATE	*Per Gram*
Neomycin, U.S.P.	3.5 mg.
Polymyxin, U.S.P.	4,000 units
Hydrocortisone, U.S.P.	10 mg.
Vehicle	*Percent Weight*
Polyethylene Glycol 400 Monostearate, U.S.P.	2.5
Isopropyl Palmitate	2.5
Stearic Acid, U.S.P.	3.0
Propylene Glycol, U.S.P.	10.0
Sodium Benzoate, U.S.P.	0.2
Water, q. s. to	100.0
FILL	
Concentrate	50.0 gm.
Nitrogen	90.0 psig.
PACKAGE	
2¼ ounce Peerless Aluminum Can (epon-lined)	
Precision 6B Valve with a 6B actuator	

STABILITY	*Potency Retained, based on theoretical*	
	Initial	*2 mo. at R.T.*
	%	%
Neomycin	103	89
Polymyxin	81	81
Hydrocortisone	105	92

Because the aerosol bandage is transparent, a postoperative patient need no longer endure the continual removal and reapplication of adhesive bandages each time the surgeon wishes to admire his "handiwork" or view the healing process. The hydrocortisone will eliminate the possibility of inflammation, particularly around the sutures, whereas the neomycin will minimize the chances of infection. This is a medicinal product which would be difficult and cumbersome, if not impossible, to duplicate without aerosol technology.

Another product now on the market which would not be possible without aerosols is the hydrocortisone asthmatic spray. During an attack of asthma or hay fever, it is desirable to get extremely fine particles of hydrocortisone in contact with the inflamed mucosal tissue of the lungs. An aerosol is the most expedient and convenient method. This achievement has been a dramatic step forward in treating the asthma patient.

A relatively simple and rapid method for diagnosing lung cancer in the physician's office has been brought about by aerosols. The inhalation of finely sprayed, warm particles of propylene glycol causes the patient to bring up sputum from areas of the lung previously inaccessible. Microscopic examination of the sputum will reveal cancer cells, if present. As you can see, aerosols are making possible some medicinal products which have only been dreams of the physician and pharmacist.

Valves

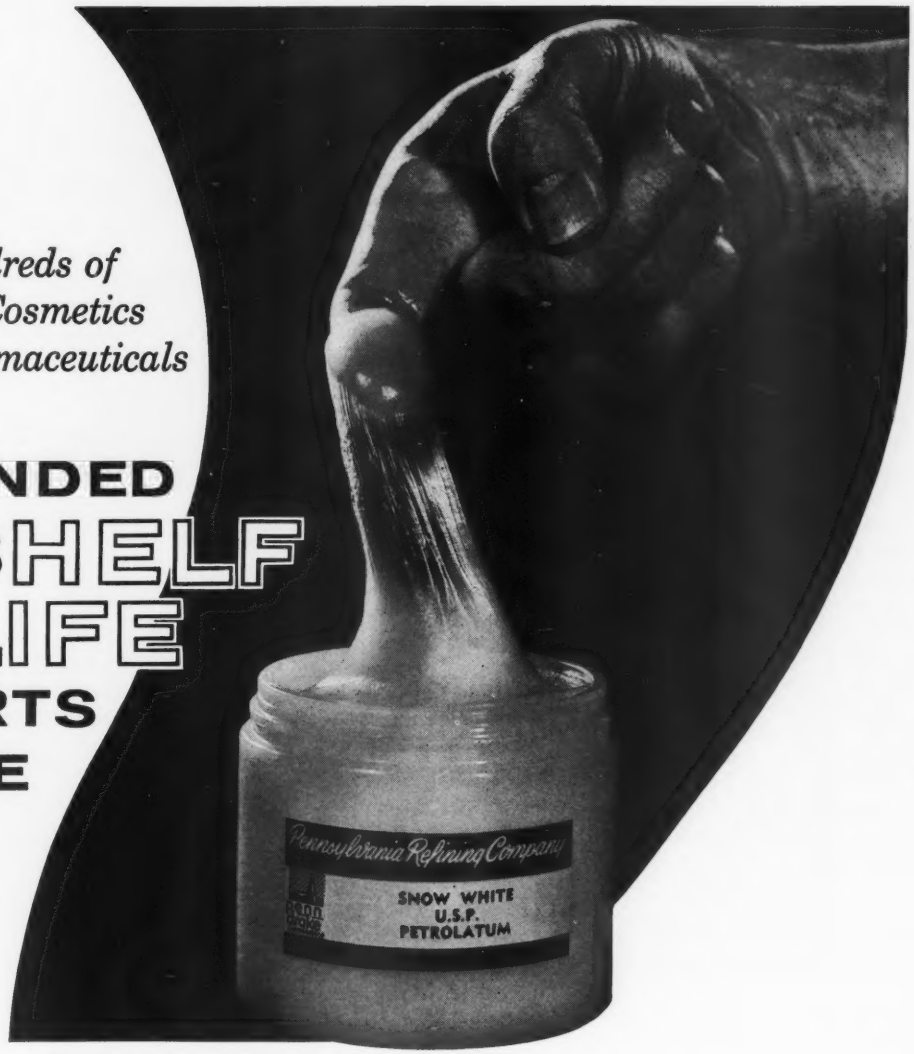
There are many valves available from several manufacturers. Each has been designed for a specific purpose and our work shows that each fulfills its requirements. A special "pat on the back" should go to those individuals who adapted the standard aerosol valve to the Nitrosol so that propellent leakage is at a minimum. Another forward step of particuar interest to the pharmaceutical manufacturer is the metered Nitrosol valve. It is now possible to market a liquid oral product in an exact dose. Previously, such dosage forms were administered by teaspoons, tablespoons or calibrated eye droppers. Actually, neither the spoons nor the dropper permitted an exact duplication of dosage time after time, or from patient to patient. After all, what is a teaspoon dose? Enough to cover the bottom and half the sides? A level quantity, or, if viscous, an almost overflowing amount? In a dropper, it is inevitable that some portion of the product will be retained upon the walls of the tube, or possibly within the rubber or neoprene bulb. In some cases, the product will be adversely affected by contact with the rubber or neoprene, or even the polyethylene, which often replaces glass for the tube. The metered Nitrosol has overcome all these problems.

Standard metered valves with the halogenated

(*Continued on page 549*)

For Hundreds of Leading Cosmetics and Pharmaceuticals

EXTENDED SHELF LIFE STARTS HERE



The extraordinary stability of Penn-Drake Petrolatums guards hundreds of the finest cosmetics and pharmaceuticals against deterioration. *Other useful characteristics:* highest order of uniformity and pharmaceutical elegance; extreme smoothness of texture; freedom from taste and odor; all colors U.S.P. grade from Super White to Amber.

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Industry's Books . . .

Information And Communication Practice In Industry, *Edited by T. E. R. Singer, Technical Information Consultant, 304 pp., Reinhold Publishing Corp., New York, (1958), cloth,* **$8.75.**

This handbook provides the principles and practice of modern industrial communications. Attention has been focused on providing the worker with necessary tools, and each chapter may be regarded as a condensed but authoritative guide to its subject field. The book includes technical writing, editing, illustrating, and classification; information services and their part in internal communications; operations research; patent collections; research files; mechanical aids to presenting technical papers; punched cards; training the literature scientist; translating; designing tables of data; indexing and abstracting. Twenty-two leading experts contribute their know-how and experience in delineating the most efficient methods for handling technical information of all kinds.

Aliphatic Fluorine Compounds, *by A. M. Lovelace, Douglas A. Rausch, and William Postelnek, Organic Materials Branch, Materials Laboratory, Wright Air Development Center, ACS Monograph No. 138, 370 pp., Reinhold Publishing Corp., New York, (1958), cloth,* **$12.50.**

The preparation and properties of all reported organic fluorine compounds (except aromatic) are covered in this new monograph. The book contains a discussion of 13 different methods of introducing fluorine into an organic molecule; detailed descriptions of all reported methods for the preparation of fluorine compounds containing various functional groups; 286 different methods of preparing these compounds; systematically discusses fluorine-containing alkanes, alkenes, alcohols, ethers and epoxides, aldehydes and netones, carboxylic acids, acyl halides and anhydrides, esters, all nitrogen compounds, organometallic and organometalloidal compounds, and sulfur compounds.

Federal Food, Drug, and Cosmetic Act—Judicial And Administrative Record 1953-1957, *by Vincent A. Kleinfeld and Charles Wesley Dunn, 1127 pp., Commerce Clearing House, Inc., New York, (1958), cloth,* **$25.**

This is the fourth volume in the series of books containing the judicial and administrative record of the Federal Food, Drug, and Cosmetic Act. The first volume covered the period from the enactment of the statute in 1938 to 1949, and the second and third continued the record through 1952. The present book covers the years 1953, 1954, 1955 and 1956. These books are not a text but a guide and source for business executives in the affected industries as well as for attorneys. In it are all pertinent (1) court decisions, (2) statements of general policy, and (3) interpretations by the Food and Drug Administration for the period covered.

Drugs Of Choice—1958-1959, *Walter Modell, M.D., Associate Professor of Pharmacology, Cornell Universtiy Medical College, Editor, 931 pp., The C. V. Mosby Co., St. Louis (1958), cloth,* **$12.75.**

This book is a practical guide to the selection of the best drug for a particular therapeutic problem. It is a volume of expert opinion designed to provide the American physician with a comprehensive source of clear, concise, authoritative and practical answers to the continually recurring question of which drug in a rapidly changing scene is, at the critical moment, the drug of choice for an actual therapeutic problem. Most chapters are divided into several major sections; each section contains a concise discussion of clinical conditions in which the drugs under consideration are used, a consideration of the several drugs, and the nature of the available data which make one or another the more desirable. Each section also contains a view of what the future holds and what is lacking in drug therapy in the particular area. Each section has a list of selected references which provide the data on which the opinions expressed are based.

Encyclopedia Of Chemical Reactions, *compiled by C. A. Jacobson, Late Professor of Chemistry, West Virginia University, Edited by Clifford A. Hampel, Manager, Chemical Equipments Div., Fansteel Metallurgical Corp., Volume VII, 479 pp., Reinhold Publishing Corp., New York, (1958), cloth,* **$12.75.**

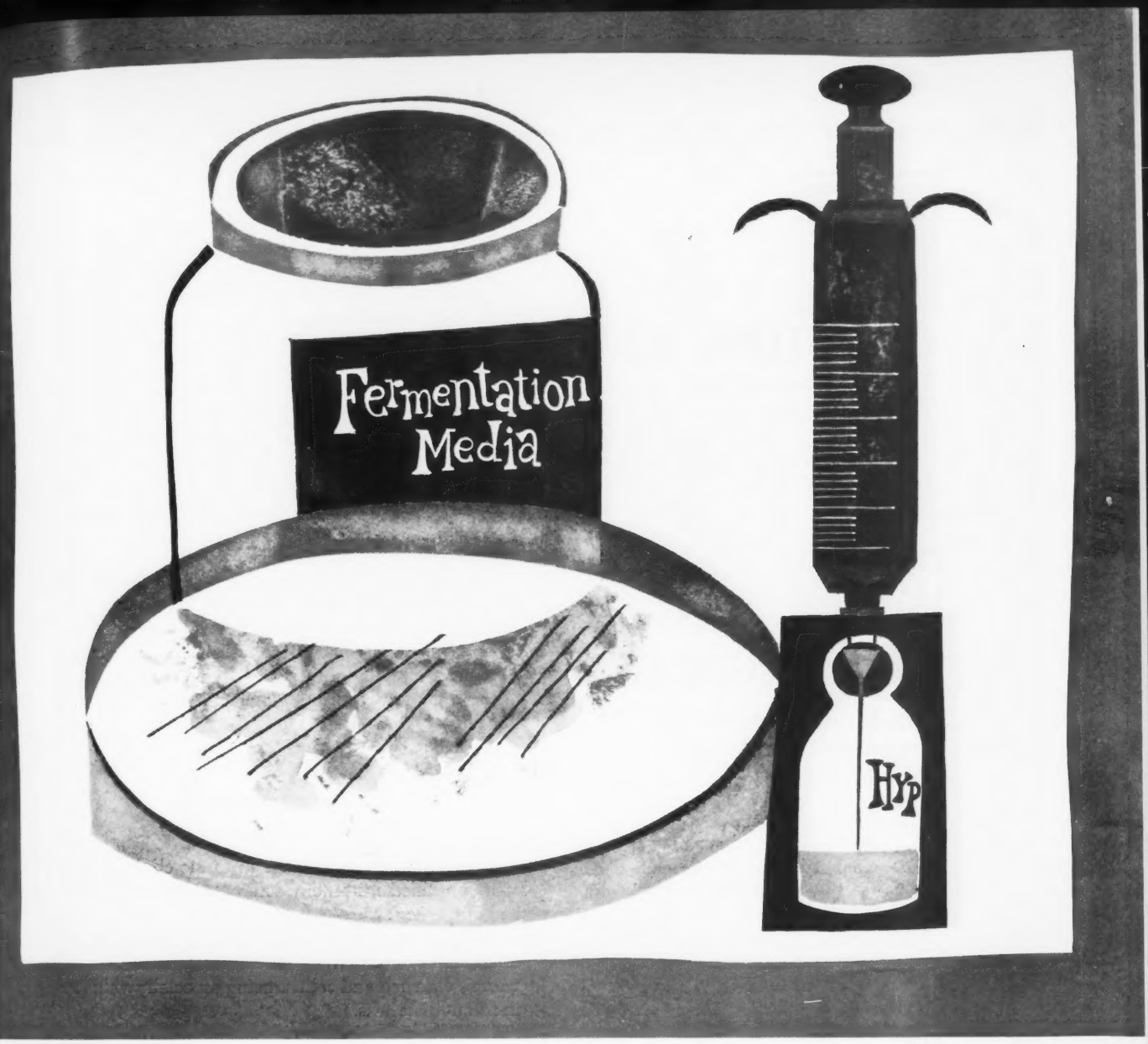
The entries in this and succeeding volumes represent almost entirely the file compiled by the late D. C. A. Jacobson at the time of his death several years ago. They are based upon reactions abstracted from technical and scientific periodicals by over 100 abstractors who endeavored to fulfill his goal of a compilation of chemical reactions involving inorganic reagents. This Volume VII includes: Strontium—Sulfur—Tantalum — Technetium — Tellurium — Terbium — Thallium — Thorium —Thulium—Tin—Titanium.

Cellulosics, *by Walter D. Paist, Celanese Corp. of America, 270 pp., Reinhold Publishing Corp., New York (1958), cloth* **$5.75.**

The purpose of this book is to present a clear, concise survey of the applications of cellulosics based on their properties. Introductory chapters on the chemistry, properties and fabrication methods of the cellulosics precede the extensive examples of their applications. These latter include fibers, films, molding powders, protective coatings, adhesives, thickening agents, and a wide variety of other uses. The reasons for the selection of any particular cellulosic for an application are thoroughly explained, and provide a sound basis for the consideration of these materials for the reader's own uses.

Fluorocarbons, *by Merrit Allen Rudner, Enflo Corp., 238 pp., Illus., Reinhold Publishing Corp., New York (1958), cloth,* **$5.75.**

This book on the fluorocarbons covers their properties, chemistry, processing and fabrication techniques, and final applications. It also demarcates the efficient use of these materials by describing their capabilities and limitations as compared with other plastics. The electrical, mechanical and chemical applications are clearly described, and future applications discussed from the standpoint of present trends. The book contains helpful charts, tables of processing data, and illustrations.



LACTOSE: APPLICATIONS UNLIMITED

MILK SUGAR

LEADING drug and food manufacturers have discovered hundreds of uses for Lactose (milk sugar). Almost every day this versatile material demonstrates its product-improving potential in dramatic new applications.

REMARKABLE PROPERTIES OF LACTOSE

For example, Lactose serves as an excellent filler and excipient for hypodermics and compressed tablets. It is soluble, uniform and does not react with active medicinal ingredients. Lactose preserves microbial cultures in a high state of viability. Its slow fermentation creates a nutritional stress on molds, promoting maximum yields of penicillin and other antibiotics. And Lactose is a mild, almost tasteless triturate for patent drugs.

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Only Western offers you all forms of Lactose in unlimited supply...5 grades...10 basic granulations (custom granulations, too). Orders filled promptly from plant or warehouse nearest you.

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The world's largest producer of Lactose, Western maintains rigid production control standards to assure unvarying high quality and purity. Exclusive Western techniques and equipment provide maximum particle uniformity...supetior results for you as a user of Lactose.

Find out how Lactose from Western can help improve your products. Write Technical Service, Department 23-K, telling us the application you are considering.

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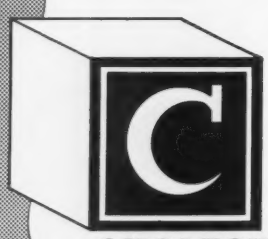
WORLD-WIDE SUPPLIER OF HIGH-QUALITY MILK DERIVATIVES

Distributed nationally by **Chemical Department, McKESSON & ROBBINS, INC.**



IS FOR

CHOLESTEROL U.S.P.,

Derived from lanolin,
Pure and free.

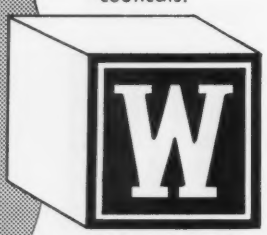
CHOLESTEROL — Our Cholesterol is U.S.P. quality and better. It is suitable for the most exacting purposes in pharmaceuticals and cosmetics.

IS FOR

VISCOLAN, T.M.

Liquid lanolin pure,
Dewaxed, deodorized,
Best for sure.

VISCOLAN is liquid lanolin at its best — clear, free of objectionable odor and color, uniform in quality. It meets TGA specifications for liquid lanolin. VISCOLAN is oil soluble and excellent in aerosols, cosmetics, and pharmaceuticals.



IS FOR

WAXOLAN, T.M.

We sing its praises,
Adds gloss and stability,
Melting point raises.

WAXOLAN is a clean hard wax separated from pure lanolin. Use it as an emollient and for gloss, grooming effects, raising m.p. and viscosity.

Here are three lanolin derivatives which can't be beat for quality and price.

Write to our Research Laboratories for additional information, samples and suggested formulations.

American Cholesterol Products
INCORPORATED

AMERCHOL PARK — EDISON, N. J.

(*Continued from page 514*)

ingredient dispersion produce a high degree of uniformity from batch to batch and results are readily reproducible.

Viscosity Regulation is Second Step

Following laboratory analysis of a sample of the emulsion, the contents of the mixer are drained off into a sweep tank for regulation of viscosity. At this stage perfume oils are added and the viscosity regulated by cooling and sweep stirring.

Finished batches are then dropped by gravity through stainless steel piping to the packaging department where a completely automated system fills, seals and labels the product and then conveys it to proper shipping areas. Shipments are packed individually according to the needs of each dealer.

Maintenance Features Described

Construction of the agi-mixer is in accordance with sanitation and cleaning requirements. All metals contacting the product are of stainless steel and the interior of the kettle has a fine satin finish to prevent contamination. The unit is easily cleaned by simply filling the kettle with hot water and operating for a short interval.

A. AND B. THERAPY

(*Continued from page 441*)

vestigators have called attention to the clinical value of a simplified milk flora dominated by *acidophilus* and *bulgaricus*.

(1) Ingestion of the living cultures, especially of *acidolphilus*, resulted in relief from chronic constipation, diarrhea and colitis, being especially valuable in infant diarrheas.

(2) The feces in bowel movements will tend to become pale yellow to almost white, semi-soft and odorless.

(3) After taking A and B cultured milk for several days, bowel movements will tend toward regularity.

(4) Bacteriologically the above results are coincident with the domination of A and B in the intestinal flora over the coliforms, and the proteus group of putrifactive gas formers. Hence the apparent colorless, odorless character of the feces.

(5) A and B cultures in fermenting produce CO_2, but no hydrogen or sulfides.

(6) Unpleasant eructations of gas (burping) from the stomach will tend to be reduced or at least retarded. Also, clinical observations show that the gas eructations from the rectum and anus will usually be less explosive, more prolonged and, again, comparatively odorless.

(7) Gas pains and excessive peristalsis, particularly in middle-aged groups are far less frequent when

(*Continued on page 537*)

A new Schimmel specialty

OSMODOR LILACAL

A full Sweet basic lilac note

Use as a base for a
finished lilac or
floral bouquet or
to add a floral touch
to any type of perfume.

Write on your firm's letterhead for a sample.

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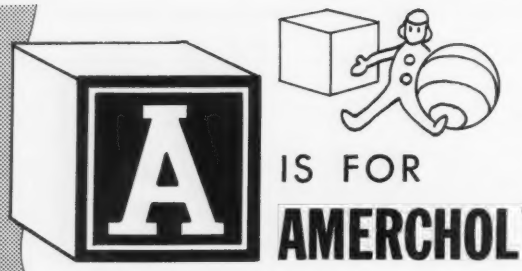


IS FOR

AMERCHOL®

A real dermal treat
Keeps skin youthful,
With moisture replete.

The AMERCHOLS head the list of skin moisturizing ingredients in use today —and with good reason. They are natural hydrophilic, non-ionic emulsifiers and surfactants derived from cholesterol and related sterols of pure lanolin origin.

Because of their unusual emollience and spreading characteristics, the AMERCHOLS are invaluable in make-up preparations as well as in creams, lotions, aerosols, baby toiletries, shaving preparations, hair products and ointments. The AMERCHOLS are hypoallergenic and non-irritating. They are soothing and safe for use on the most delicate tissues.

The AMERCHOLS are available in both liquid and solid forms.

Write on your business letterhead for complete technical literature, suggested formulas and samples.

American Cholesterol Products
• INCORPORATED •

AMERCHOL PARK — EDISON, N. J.

(*Continued from page 474*)

(17α-ethinyl-Δ^4-androsten-17β-ol-3-one) is dissolved in sufficient organic solvent such as propylene glycol to dissolve it and the latter solution is then added to and intimately mixed with a cream base compounded as above explained. The amount of ethisterone added as an active substance is such that 1 to 10 mg. thereof is present in every ounce of the finished cream."

METI-DERM AEROSOL

(*Continued from page 455*)

tion technique developed, the aerosol was now ready to be evaluated for marketing. First came consideration by the packaging committee—made up of members of Package Development, Promotion, Advertising, Purchasing, Quality Control, Production and Management—who determine such things as the size and shape of the container, the label, design and final packaging specifications.

"We wanted an eye-catching but ethical appearing package," committeeman George Hlavin, Product Promotion, reported, "and after some deliberation, we decided that an oversize cap almost as wide as the can's shoulder would offer a more secure fit and better appearance and, because it wouldn't collect dust, insure cleanliness."

Then there was the label, and the committee, which also includes chairman Frederick Pickerell, Purchasing, Carl Larsen, Advertising, and Mr. Graham, contacted Art Department director Shelden Reed for a suitable design. He came up with one that met their requirements—a label with nonclinical directions for permanent attachment to the container and a detachable nameplate section where the pharmacist's label could be placed.

At first, the experimental label had Schering's traditional red-purple on a silvery background, but the committee later agreed on a white background to match the white cap.

Packed and Ready to Go

During this time production requirements for the Meti-Derm aerosol were being worked out by Dr. B. Jatul's Product Development Department and a Baltimore aerosol packager, Stalfort Pressure Pak, Inc.

Simultaneously, product manager Pfeffer directed the Advertising and Sales groups in readying plans for the introduction of Meti-Derm aerosol to the field. An agency was assigned the task of providing a detailman's kit that would help acquaint physicians and buyers with the unique features of the new product.

The flip chart for detailing Meti-Derm aerosol was well received by Product Promotion and Sales people alike, and Domestic Sales training began providing instructional materials for Schering's 500 hospital

(*Continued on page 548*)

Reader's Questions . . .

Foot Deodorants: *Can you suggest formulations for foot deodorant preparations such as creams and powders?*
CHICAGO

These should be based upon the antibacterial activity of compounds like hexachlorophene and the astringency of aluminum salts. Methenamine, hexamethylene tetramine, although too irritating and sensitizing as a rule for underarm deodorant action, may be applicable to the problem of foot deodorizing. This last material in the presence of traces of acid will release small quantities of formaldehyde, an extremely powerful astringent and antibacterial. The foot powder may be simply compounded from a mixture of about 75 parts of talc and 25 parts of highly absorbant colloidal kaolin. One per cent of hexachlorophene or one-half per cent of methenamine can be the active ingredient, but these substances should not be used together. The perfume should be one of the mints containing enough of menthol to provide cooling, soothing effect.

The cream formula should be based upon glyceryl monostearate, the self-emulsifying grade to make a soft cream with a slight alkaline pH being used for hexachlorophene or methenamine, the acid type for the aluminum astringent cream with or without hexachlorophene. In each case, the monoglyceride proportion should be about eight per cent, with five per cent of glycerin or sorbitol to retard drying. The acid-stable cream, made with a cationic surfactant, may also provide additional antibacterial values if the quaternary is properly selected. A few per cent of alcohol, as the cream will tolerate it, will increase the rate of drying on the skin and increase the cooling effect to some extent.

Although the foot powder will not require the extreme processing needed for face powders, for example, it should nevertheless be very carefully ground to remove all possibility of grittiness and mixing must be quite thorough to assure uniform dispersion of all ingredients.

Announcement

PERFUMERY ASSOCIATES, INC. wishes to notify all of their business friends in the industry that they have taken over the operation and management of PH. CHALEYER, INC.

The principal office of the Company will be located at 160 East 56th Street, New York 22, New York. Telephone: PLaza 3-8618-9.

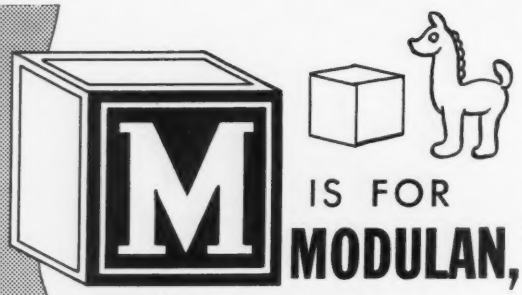
The managing officers are as follows:

President	— Henry Retailliau
Vice President	— Thomas Miserendino
Treasurer	— Robert Luthy

The research and development facilities of both organizations have been combined to create and give the best quality and service to the trade.

Perfumery Associates, Inc.

160 East 56th Street New York 22, N. Y.



M IS FOR MODULAN,®

Emollient supreme,
For skin and hair
Works like a dream.

Yes, MODULAN is above all an emollient. It is lanolin, modified by acetylating the hydroxyl groups to gain extremely valuable new conditioning properties and effects when used on skin and hair.

(U. S. Patent No. 2,725,334 and foreign patents.)

MODULAN is hypo-allergenic and non-irritating.

Some of the outstanding characteristics of MODULAN ARE —

Oil soluble, hydrophobic
Substantive yet permeable films
Practically odorless
Soft-waxy, non-tacky protective films
Compatible with o/w emulsions
Compatible with soaps and foams

MODULAN is particularly recommended for use in creams, lotions, baby oils, hair preparations, shaving creams, cream shampoos, lipsticks and ointments.

We would be happy to supply you with technical literature, suggested formulas and samples. Please write on your business letterhead.

AMERICAN CHOLESTEROL PRODUCTS, INC. AMERCHOL

American Cholesterol Products
INCORPORATED

AMERCHOL PARK — EDISON, N. J.

(*Continued from page 437*)

30	Musk ketone
30	Benzyl propionate
48	Tolyl acetate
60	Linalool
60	Ylang Bourbon Extra
60	Geranyl acetate
60	Phenylethyl alcohol
60	Terpineol
90	Hydroxycitronellal
90	Amyl cinnamic aldehyde
90	Benzyl acetate
174	Benzyl salicylate
4	Diethyl phthalate
1,000	

This Golden Jasmin is a fancy jasmin bouquet used as an "extract" fragrance. "Tetraquinone" is a trademark for tetrahydro-para-methyl-quinoline, a material related to indole but of a civet-like character and much less likely to discolor.

GARDENIA

The fragrance of the natural gardenia flower is heavy and cloyingly sweet, with emphasis on jasmin and tuberose notes, topped off with a mushroom effect. Natural absolutes of the gardenia flower are occasionally available on the American market, but they are not especially true to the fragrance of the real flower. Jasmin absolute and rose otto are more effective for adding the finishing touches of elegance to a gardenia composition than is gardenia absolute itself.

Paradoxical as it may seem, compositions designed to faithfully simulate the real gardenia flower generally do not find good customer acceptance in America. The majority of the successful gardenia fragrances should be described as gardenia fantasies. They are usually based on jasmin, tuberose, rose and orange flower, with a liberal use of geranium oil and civet or indoloid notes. In many instances, vetyvert-patchouli and even virtual chypre notes have been introduced.

The classic material for building the gardenia odor is methyl phenyl carbinyl acetate (see-phenylethyl acetate). This is an intensely odored material, which requires great skill in its use, to avoid harshness. In recent years methyl phenyl carbinyl propionate has come to the fore, and has found excellent use in fine perfumery. Its handling is less critical and it is not as intense and harsh as the acetate; it is also sweeter.

Hydratropyl acetate, one of the lesser known aromatic chemicals which has a gardenia odor, is finding increased use.

Among the recently developed chemicals, phenylethyl methacrylate is outstanding in its representation of the gardenia odor. It is most unfortunate that a technical fault hinders the use of this execllent aromatic material. It belongs to that class of chemicals used to produce the methacrylate series of resins. Unless it is heavily stabilized with hydroquinone, it will quickly polymerize into an insoluble odorless resin. Stabilization only delays this polymerization; it does not prevent it. Thus there is always the risk that an

extract or cologne made with a composition containing it might develop a precipitation simply by standing. Such a precipitation could be disastrous to a firm having to accept large-scale returns caused by this polymerization-precipitation.

The following are the "purpose" classifications of the gardenia components.

Basics

Methyl phenyl carbinyl acetate, methyl phenyl carbinyl propionate, benzyl acetate, benzyl formate, amyl cinnamic aldehyde, hydroxycitronellal, hydroxycitronellal dimethyl acetal, oil geranium Algerian, rhodinol, citronellol, geraniol, dimethyl octanol.

Blenders

Benzyl isobutyrate, benzyl butyrate, aldehyde C-18, ionone, methyl ionone, heliotropine, vanillin, benzyl phenylacetate, hexyl salicylate, linalool, Petitgrain Oil, linalyl acetate, phenylethyl dimethyl Carbinol, benzyl dimethyl carbinol, tolyl acetate, benzyl propionate, phenylethyl alcohol, hydratropic alcohol.

Adjuvants

Eugenol, isoeugenol, oil of bay, terpineol, phenylacetaldehyde, phenylacetaldehyde dimethyl acetal, anisic aldehyde, oils of bergamot, mandarin, bitter orange, sweet orange, lemon, tuberyl acetate, methyl benzoate, phenylethyl propionate, phenylethyl isobutyrate, methyl salicylate, ethyl salicylate, napthyl propionaldehyde, sandalwood oil, coumarin, dimethyl hydroquinone, ylang Bourbon extran, ylang absolute, hydroxycitronellal—methyl anthranilate Schiff's base ("Orangeol"). "Trace" materials: citronellyl oxyacetaldehye, "Veronol" aldehyde, methyl nonyl ketone, oil of rue, aldehydes C-8 and C-12 MNA, hydratropic aldehyde, napthyl propionaldehyde, methyl heptine carbonate.

Fixatives

Indole, skatole, civet, acetisoeugenol, benzyl salicylate, Peru resin, myrrh resin, tolu resin, benzoin resin, musk xylol, musk ketone, musk ambrette, phenylethyl salicylate, "Astrotone" BR.

Naturals

Jasmin absolute, tuberose absolute, oil of neroli Bigarade, orange flower absolute, rose otto, rose absolute, mimosa absolute, genet absolute, immortelle absolute, jonquille absolute.

GARDENIA FOR SOAP E.005

20	Hydroxycitronellal
5	Cinnamic alcohol
8	Geraniol
2	Ionone AB
1	Methyl ionone
1	Amyl salicylate
2	Dimethyl hydroquinone
4	Heliotropine
20	Terpineol
10	Benzyl acetate
4	Benzyl propionate
5	Linalool

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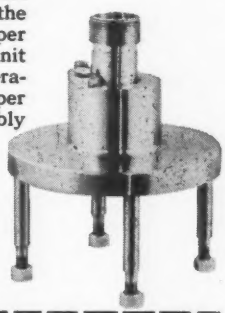

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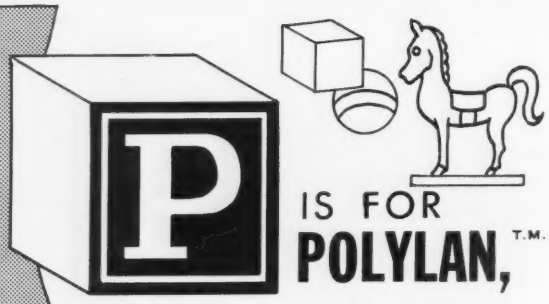

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5	Styrallyl acetate
1	Hydratropyl acetate
2	Aldehyde C-14 10% in DEP
1	Phenylacetic acid
9	Benzyl phenylacetate
100	

This E.003 composition illustrates the design of an inexpensive gardenia fragrance without the use of indole. It is based upon a jasmin-rose theme, with lilac notes (terpineol) as a cheap source of the floral adjuvant effect. Phenylacetic acid supplies a simulation of the indoloid note.

GARDENIA FOR COSMETICS E.006

45	Benzyl acetate
15	Benzyl propionate
10	Amyl cinnamic aldehyde
4	Hexyl cinnamic aldehyde
2	"Astrotone" BR 100%
5	Cinnamyl acetate
12	Ylang Bourbon extra
6	Methyl naphthyl ketone
12	Phenylethyl alcohol
4	Hydratropyl alcohol
12	Oil lemon Italian
15	Oil petitgrain
9	Hydroxycitronellal
15	Linalyl acetate
12	Styrallyl propionate
2	Hydrotropyl acetate
2	Coumarin
6	Sandalwood oil
5	Ionone alpha
8	Rhodinol
1	Tuberyl acetate
23	Propylene carbonate
225	

This type of gardenia fragrance is light and sweet, a factor desirable in cosmetic fragrances. There are no indoloid notes or even a simulation of them with phenylacetic acid. The floralcy is boosted by a liberal use of ylang Bourbon extra coupled with a small quantity of the potent tuberyl acetate. The oil lemon and the petitgrain contribute a cologne-like lightness and freshness. The "Astrotone" BR 100 per cent is the nearest to an animal note in this composition. By introducing oil of bergamot, this E.006 can be converted into an interesting gardenia cologne.

The gardenia fragrance often serves as a base for exotic floral fantasies. The following gardenia composition is an example of a high-class fragrance and a base for floral fantasies. It should be noted that this composition uses very little of the styrallyl ester type (propionate) effect but rather relies on jasmin, rose and multiple adjuvants.

GARDENIA EXTRA FOR FINE PERFUMERY E.007

30	Hydroxycitronellal
26	Benzyl propionate
20	Tolyl acetate
17	Civettiane
12	Rhodinol
10	Geranium oil, Algerian
10	Amyl cinnamic aldehyde
8	Ylang absolute
8	Phenylethyl dimethyl carbinol
8	Musk xylol
8	Linalyl acetate
8	Musk ketone
6	Amyl salicylate
5	Phenylacetic acid
5	Tuberyl acetate

(*Continued from page 526*)

5	Petitgrain oil
5	Sandalwood oil
5	Citronellyl acetate
4	"Palatone" 5% in phenylethyl alcohol
4	Phenylethyl dimethyl carbinyl acetate
4	Oil of bay
4	Methyl ionone
4	Oil of mandarin Italian
4	Citronellyl oxyacetaldehyde
4	Heliotropine
3	Musk ambrette
4	Styrallyl propionate
1	Rose otto
1	Jasmin absolute
2	"Cumin" ketone
15	"Astrotone" BR 100%
250	

TUBEROSE

The odor of the tuberose flower is extremely heavy resembling a fancy floral bouquet with an Easter lily background. It is not a popular fragrance from the perfumer's viewpoint. It is best used to furnish a flowery adjuvant in other compositions. To many people the tuberose fragrance has a depressing effect.

The following are the "purpose" classifications of tuberose components:

Basics

Methyl benzoate, ethyl benzoate, methyl salicylate, ethyl salicylate, phenylethyl cinnamate, tolu oil distilled.

Blenders

Benzyl acetate, benzyl formate, cinnamyl butyrate, linalool, rhodinol, dimethyl octanol, hydroxycitronellal, "Cumin" ketone, isobutyl phenylacetate, oil cumin seed, oil angelica seed, oil of celery seed, para cresyl phenylacetate, methyl ionone, benzyl dimethyl carbinol, phenylethyl alcohol, hydratropyl alcohol.

Adjuvants

Ylang Bourbon extra, ylang absolute, oil of cananga, methyl anthranilate, hydroxycitronellal—methyl anthranilate Schiff's base ("Orangeol"), citronellyl acetate, citronellyl isobutyrate, heliotropine, phenylethyl phenylacetate, benzyl isobutyl ether, "Veronol" aldehyde.

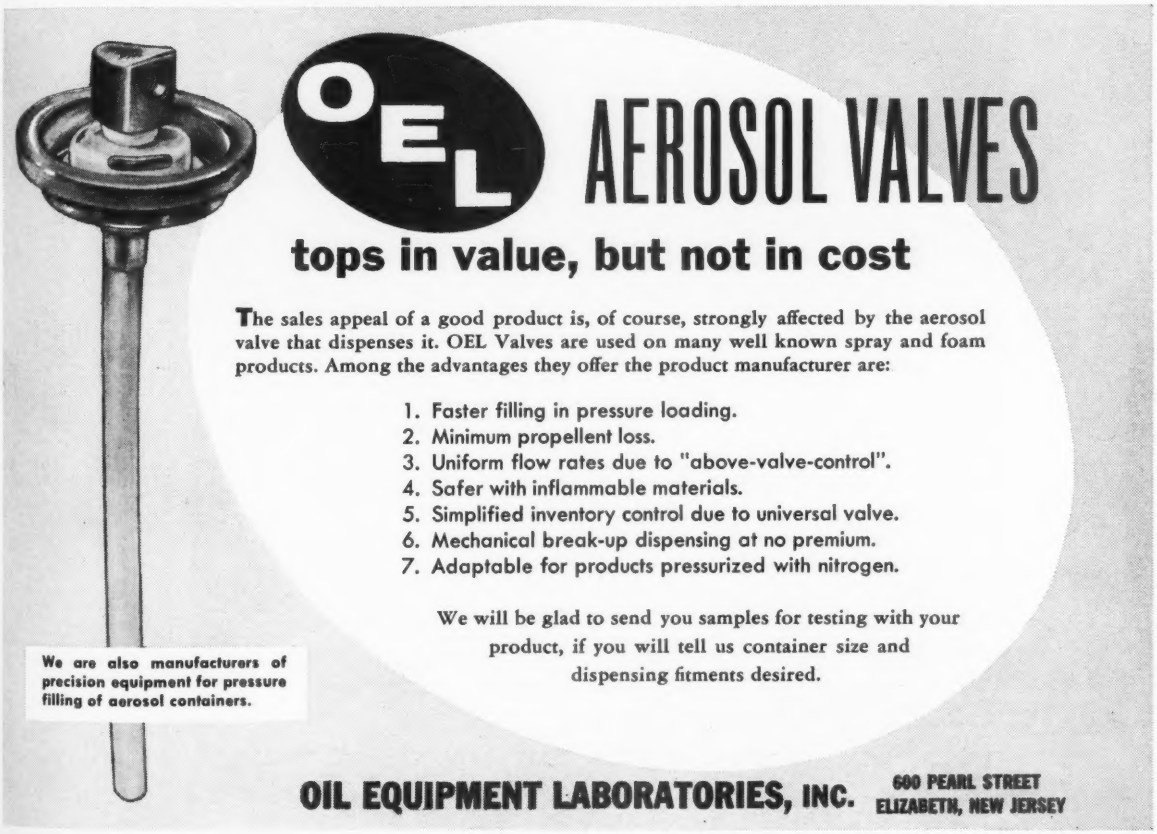
Fixatives

Balsam Peru, isoeugenol phenylacetate, coumarin, benzyl salicylate, phenylethyl benzoate, cinnamic alcohol, benzoin resin.

TUBEROSE FLOWERS E.008

25	Amyl cinnamic aldehyde
20	Phenylethyl alcohol
20	Oil tolu distilled
20	Mimosa absolute
10	Rhodinol
10	Methyl ionone
12	Ylang Bourbon extra
6	Tuberyl acetate
4	Methyl salicylate

(*Continued on page 530*)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The Trade Marks published here represent all listings in the Official Gazette of the United States Patent Office and all unregistered names compiled by the Toilet Goods Association and supplied to us through their cooperation.

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Trade Literature

Wide Range Thermometers
Leeds & Northrup Company, 4934 Stenton Avenue, Philadelphia 44, has issued Catalog EN-S4, "Thermohm Temperature Detectors . . . Assemblies, Parts and Accessories," a 36-page booklet which describes resistance thermometers for temperatures up to 1000° F. The publication shows how these primary elements are being used in the drug, chemical, and other fields. A special section describes precision resistance thermometers for precise laboratory work involving temperatures from –261 (12k) to 500° C.

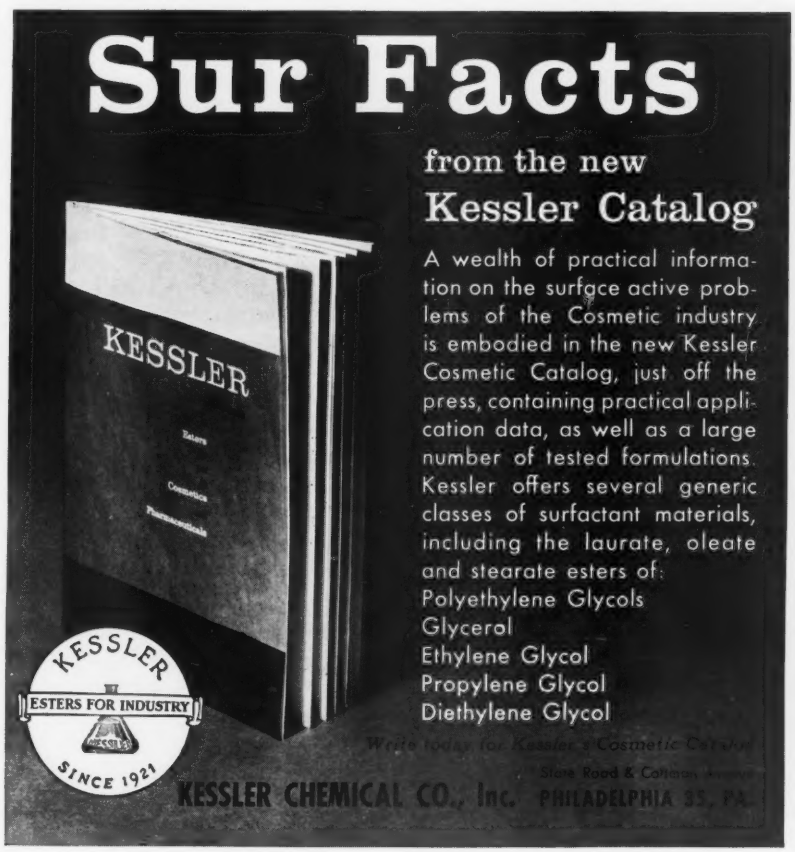
Vibratory Packers
Syntron Company, 570 Lexington Avenue, Homer City, Pa., has issued a four-page catalog section on their "pulsating magnet" Vibratory Packers and "hydraulic" Packers and Jolters which increase the net contents of containers as much as 20 to 30 per cent.

Water Conditioning
Technical Reprint T-161, available from Graver Water Conditioner Co., 216 West 14 Street, New York 11, is an article entitled Feedwater Equipment Designs and Methods which discusses in detail the two main methods of treating boiler feedwater for industrial applications: hot process zeolite and demineralization. Latest developments in design of equipment and components for the two processes are cited throughout and typical case histories of equipment application are described.

Wyeth in Action
Wyeth in Action is a 32-page, highly attractive booklet depicting the firm's growth from a small Philadelphia drug store in 1860 to the world-wide enterprise it is today. Available from advertising agency, Lewis & Gilman, 6 Penn Center Plaza, Philadelphia 3, the booklet is replete with excellent photographs of plants and installations, as well as with water colors of plant exteriors in this and foreign countries.

Contact Microradiography
The Instruments Division, Philips Electronics, Inc., 750 South Fulton Avenue, Mount Vernon, N. Y., has available a new 16-page booklet giving technical facts on contact microradiography for research in biological and other fields. Texts include sections which explain the absorption of X-rays and contrast, projection microradiography and contact microradiography equipment, films and magnification, and applications. Illustrated with drawings, photos and micrographs, the booklet covers preparation of specimens with respect to fixation, embedding, sectioning, attaching to slides, staining, and mounting.

Conveyor Design
Sprout, Waldron & Co., 130 Logan Street, Muncy, Pa., has available Bulletin I-28, an 8-page booklet on practical conveyor design which gives background information on how to select, operate and maintain pneumatic systems for transporting dry bulk materials. It covers positive, negative, and combination systems.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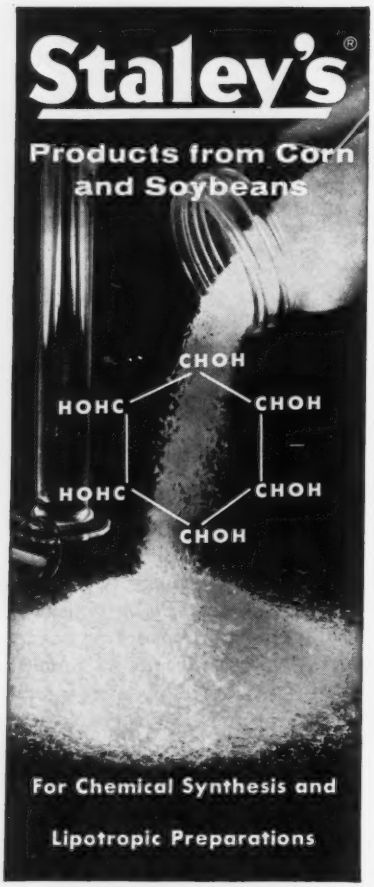

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(*Continued from page 508*)

year, involving ten animals per test (counting all four research organizations). Tissue culture tests may raise this total to over 55,000 tests per year.

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The ratio of a drug's toxicity to its curative power is called its *therapeutic index*, and this is the major problem of cancer chemotherapy today. All presently known anti-tumor drugs have a low therapeutic index; their curative dose is too close to their lethal dose.

PERFUME FORMULATION

(*Continued from page 527*)

2	Oil celery ex seeds
10	Hydroxycitronellal
10	Methyl anthranilate
4	Amyl salicylate
2	"Palatone" 5% in Phenylethyl Alcohol
2	Isoeugenol
2	"Cumin" ketone
2	Cuminic aldehyde 10% in DEP
5	Hexyl cinnamic aldehyde
4	Tolyl acetate
2	Phenylpropyl alcohol
6	Civettiane
8	Heliotropine
2	Phenylethyl isobutyrate
4	"Glycidiol"
1	Aldehyde, C-14 10% in DEP
2	"Veronel" aldehyde 10% in DEP
4	Cinnamyl isobutyrate
1	Aldehyde C-12 MNA 10% in DEP
200	

ORANGE FLOWER

The "orange flower" of perfumery is the flower derived from the bitter orange tree. The blossoms from this tree yield two products according to the method of extracting their fragrance. If the flowers are steam-distilled, the oily layer floating on the distillate is collected; this is known as neroli. If the flowers are extracted with solvents or other procedures, the product then becomes known as orange flower absolute. The orange flower absolute is considered the finer product of the two and commands the premium price. The two products have so much in common in odor that they are treated almost as one in the following discussion. The following are the "purpose" classifications of the components:

Basics

Oil of petitgrain (French, South American or Moroccan), terpeneless petitgrain made from the natural oil from any of these sources.

Blenders

Rhodinol, citronellol, geraniol, linalool, dimethyl octanol, oil of lemon, oil of sweet orange, methyl anthranilate, benzyl phenylacetate, phenylacetaldehyde dimethyl acetal, hydratropic aldehyde dimethyl acetal, naphthyl alpha propionaldehyde, isobutyl benzoate, amyl benzoate, amyl para toluate, petitgrain ex citronnier (lemon trees), nerol.

Adjuvants

The formates, acetates and propionates of geraniol, citronellol, rhodinol, dimethyl octanol, linalool and terpineol; benzyl acetate, benzyl propionate, benzyl isovalerate, Lignyl acetate, Ylang Bourbon extra, oil of bergamot, oil of Italian mandarin, dimethyl anthranilate, hydroxycitronellal, isoeugenol, decyl formate, dimethyl acetal of Aldehyde C-10, Methyl Naphthyl Ketone, phenylethyl dimethyl carbinol, Citral. Aldehyde C-9, C-10, C-12 MNA, phenylacetic Acid.

Fixatives

Beta naphthol ethyl ether, Beta naphthol methyl ether, phenyl napthyl ether, musk ketone, musk xylol, benzoin resin, benzyl salicylate, indole, skatole.

Naturals

Oil of neroli, orange flower absolute.

NEROLI

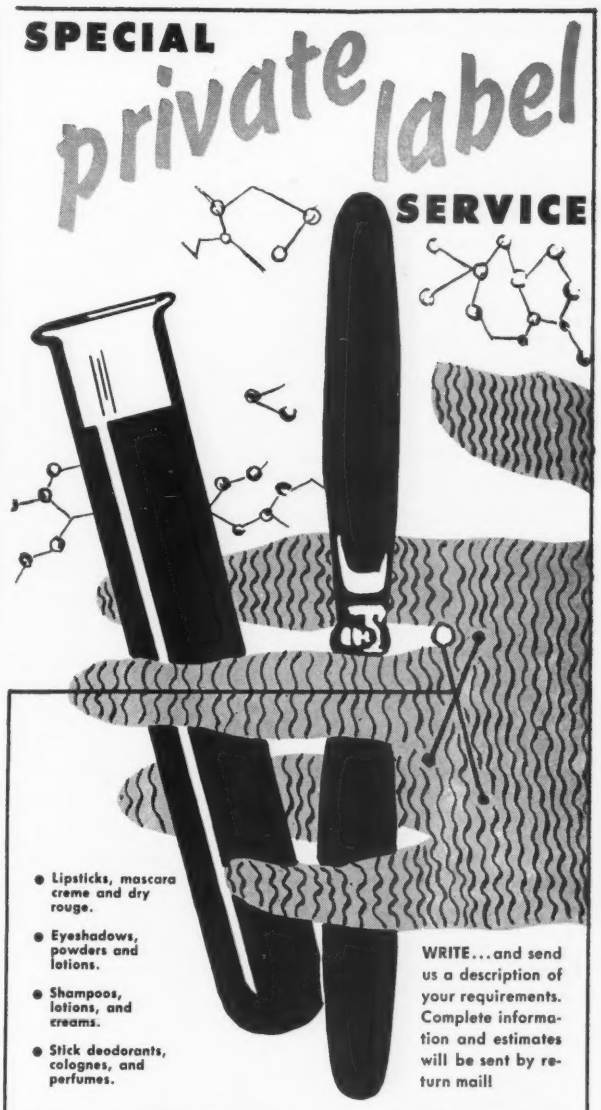
Neroli compositions are almost entirely used as adjuvants in other compositions. Therefore the subsequent two formulas are shown: one is very inexpensive and suitable for soap work; the other is a classic type for good cologne and extract work.

CHEAP NEROLI FOR SOAP E.009

500	Orange terpenes (or limonene technical)
200	Geranyl acetate (soap grade)
100	Bois de rose oil
100	Methyl anthranilate
60	Amyl cinnamic aldehyde
80	Benzyl acetate
10	Citral
10	Nerolin
40	Lignyl acetate
1100	

NEROLI BIGARADE TYPE FOR FINE PERFUMERY E.010

100	Petitgrain (South American)
100	Linalyl acetate (90-92%)
100	Phenylethyl alcohol
50	Hydratropyl alcohol
50	Linalool ex bois de rose
50	Geranyl acetate
50	Hydroxycitronellal
30	Hydroxycitronellal—methyl anthranilate
10	Oil Coriander
10	Immortelle absolute
10	Ylang Bourbon extra
150	Ethyl decylate
50	Benzyl phenylacetate
5	Oil of celery seeds
3	Cuminic aldehyde
1	Indole
2	Aldehyde C-12 MNA 10% in DEP
1	Citronellyl oxyacetaldehyde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ORANGE FLOWER COMPOSITIONS

Orange flower compositions are simply "flowered up" versions of the neroli type. This "flowering" is done by increasing the jasmin and rose notes, and the indoloid effect. It is suggested that the student examine the adjuvants under the "purpose" classification of the jasmin and rose groups, then discreetly work these into either of the neroli formulas given. To demonstrate this approach the following compositions are shown:

FLEURS D'ORANGER FOR SOAPS E.011

300	Oil sweet orange Californian
200	Oil lemon Californian
100	Citronellol
50	Geranyl acetate
60	Amyl cinnamic aldehyde
60	Benzyl acetate
30	Methyl napthyl ketone
5	Citral
5	Phenylacetic acid
90	Lignyl acetate
900	

FLEURS D'ORANGER BIGARADE FOR FINE PERFUMERY E.012

20	Rhodinyl acetate
10	Rhodinyl butyrate
15	Phenylethyl dimethyl carbinyl acetate
10	Oil of mandarin Italian
25	Petitgrain ex citronnier
5	Methyl naphthyl ketone
1	Civettiane
1	Castoreum absolute 10% in benzyl alcohol
5	Musk Ketone
10	Rhodinol
5	Linalool ex bois de rose
10	Oil bitter orange
15	Oil bergamot
5	Methyl ionone
2	Phenylacetic acid
1	Amyl phenylacetate
2	Cinnamyl butyrate
20	Hydroxycitronellal-methyl anthranilate
5	"Cumin" ketone
3	Ylang Bourbon extra
10	Phenylethyl alcohol
10	Benzyl phenylacetate
10	Phenylethyl phenylacetate
200	

Hydroxycitronellal-methyl anthranilate is now sold under trade names such as "Orangeol" and "Aurantiol" and occasionally under "H. M. A. 50 per cent." In this latter instance the product has been diluted with 50 per cent solvent to increase its fluidity. An adjustment must therefore be made in the composition to compensate for the added solvent. Compositions of the type represented by E.012 find considerable use in fancy colognes. Very striking modifications of this formula can be made with aldehydes C-12 MNA, C-11, "Veronol" and citronellyl oxyacetaldehyde.

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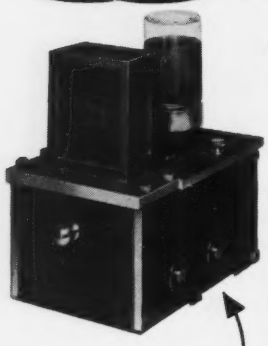

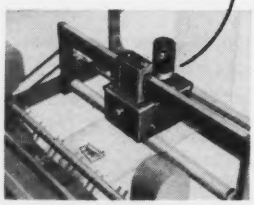

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NARCISSUS AND JONQUILLE

The narcissus and jonquille are a "team" somewhat like neroli and orange flower. The narcissus odor can be best described as an extremely cloying mixture of gardenia, rose and hyacinth with neroli overtones. Its fragrance is so sweet that it is disagreeable to many people. As single floral fragrances, there have been very few versions of narcissus that have achieved any measure of popularity. The "black" narcissus fragrances, which were really narcissus fantasies rather than flower reproductions are the only exception of note in recent years.

However, the narcissus odor does have a moderate use as a flowery adjuvant in lilacs, hyacinths, chypres and fancy orientals. Traces are attractive in white roses and carnations.

The jonquille resembles a mixture of jasmin, tuberose and hyacinth, with nuances of rose and lilac. It is sweet but in a pleasant way in contrast to the cloying quality of narcissus. It should be an attractive single floral fragrance, but for some reason is not. Perhaps it has not been given enough consideration because of its relationship (in odor) to the narcissus.

Jonquille compositions find a substantial (and increasing) use as flowery adjuvants in fantasy fragrances, largely as variations on jasmin. They are especially good in fancy chypre designs, and as floral backgrounds for colognes containing petitgrain.

The following are the "purpose" classifications of the components of these two florals:

Basics

Para cresyl caprylate, para cresyl acetate, para cresyl phenylacetate, petitgrain, hydroxycitronellal, tolyl acetate, sandalwood, rhodinol, citronellol, geraniol, nerolin, vanillin.

Blenders

Terpineol, linalool, oil bergamot, cinnamic alcohol, hydratropyl alcohol, styrallyl propionate, cinnamyl acetate, cinnamyl isovalerate.

Adjuvants

Ylang Bourbon extra, benzyl acetate, benzyl propionate, hydratropyl acetate, phenylethyl propionate, methyl anthranilate, dimethyl anthranilate octyl isobutyrate, oil of cananga (natural and terpeneless), benzyl isobutyrate, methyl ionone, alpha ionone, amyl salicylate, oil clary sage, anisic aldehyde, amyl cinamic aldehyde, para cresol ethyl ether, para cresol methyl ether, heliotropine, oil sweet basil, oil estragon, patchouli oil, vetyvert, vetyvert acetate, citronellyl oxyacetaldehyde, aldehyde C-21 MNA, aldehyde "Veronol," acetates and propionates of rhodinol, citronellol geraniol, dimethyl octanol and its actetate, as well.

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Naturals

Oil of neroli, orange flower absolute, jasmin absolute, rose otto, rose absolute, jonquille absolute, narcissus absolute, tuberose absolute.

The following are two representative formulas of these flower types:

NARCISSUS E.013

4	Oil sweet basil, French
10	Phenylacetic acid
10	Hydratropyl acetate
10	"Cumin" ketone
12	Oil clary sage
16	Anisic aldehyde
16	Heliotropine
16	Amyl salicylate
16	Musk xylol
16	Methyl ionone
20	Rosacetol
20	Amyl cinnamic aldehyde
20	Benzyl acetate
20	Para cresyl phenylacetate
20	Ylang Bourbon extra
20	Paracresyl caprylate
20	Tolyl acetate
40	Musk ketone
40	Oil petigrain South American
40	Rhodinol
40	Phenylethyl alcohol
50	Nerolin
50	Sandalwood oil
60	Hydroxycitronellal
10	Oil bitter orange
10	Oil labdanum distilled 10% in DEP
10	Vetyvert acetate
10	Oil patchouli
24	Benzl salicylate
650	

JONQUILLE FLEURS E.014

5	Aldehyde C-12 MNA 10% in DEP
10	Oil estragon French
10	Phenylethyl acetate
20	Heliotropine
30	Phenylacetic acid
30	Musk ketone
30	JPara cresyl caprylate
30	Ylang Bourbon extra
30	Para methyl hydratropic aldehyde
30	"Alpine Violet"
30	Petitgrain South American
30	Anisic aldehyde
40	Phenylethyl alcohol
40	Rhodinol
40	Eugenyl phenylacetate
50	Vanillin
50	Nerolin
50	Sandalwood oil
60	Amyl cinnamic aldehyde
60	Benzyl salicylate
75	Para cresyl phenylacetate
110	Tolyl acetate
100	Hydroxycitronellal
40	Benzyl acetate
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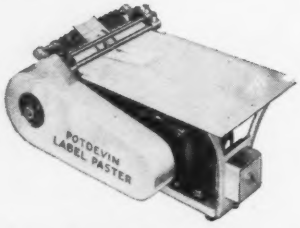

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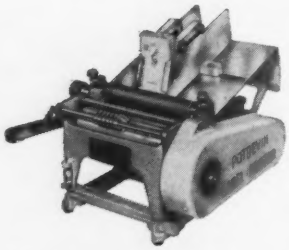

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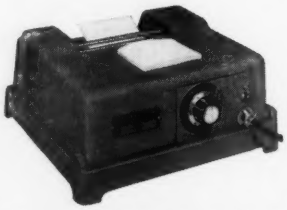

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(*Continued from page 445*)

the third year. *Improved audio-visual materials* could acquaint them with areas of serious shortage, such as physical medicine, psychiatry, and public health.

These shortages, by present indications, will spread to other branches and to the entire profession, unless more of our promising young people are steered toward medical careers. Dean Vernon W. Lippard of Yale estimates that current graduating classes are 2,000 short of the number necessary to maintain the present ratio of physicians to population. Since 1950 there has been a falling off of one-third in applications to American medical schools. Even more alarming is the declining caliber of the applicants. Eight years ago 40 per cent entered medical schools with an A average in college work; today, only 16 per cent.

This report from Yale receives corroboration from Harvard. Medical schools, said an internist on our panel, used to get most of their applications from the A's and high B's, but now it is those with a C or even a D average who aspire to treat our infirmities.

If this falling off in the quality of medical students is allowed to continue, it won't be good for the medical profession, or for the pharmaceutical industry either. *This is an area in which education-minded doctors are eager for our help.* Here are some worthwhile projects suggested by our doctors for secondary school students:

(1) grants for speakers at high school assemblies and commencement exercises;

(2) essay contests or prizes for grades in subjects that might be continued in college and graduate school;

(3) leaflets describing medicine as a profession for distribution through teachers, guidance workers and vocational counselors;

(4) equipment for simple experiments in the biological sciences;

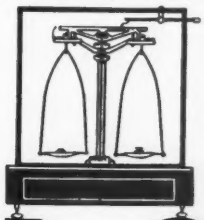
(5) summer jobs in pharmaceutical laboratories, even if only washing test tubes;

(6) adequate representation of the medically-oriented sciences at science fairs and other youth events, through loan exhibits and cooperation with local hospitals and medical societies.

And there should be more fellowships, clinical traineeships and endowed chairs sponsored by pharmaceutical houses to offset the rather prevalent feeling that the pharmaceutical industry is hiring away the best men at salaries medical schools can't match. One doctor expressed the view that much of the research you want will be done more adequately under such an arrangement than if you do it yourself. Be that as it may, such projects, by preparing men to fill the 331 full-time faculty positions now reported vacant, will strengthen the medical schools and answer the criticism that we take away men for whose education we have contributed nothing.

Our medical advisors are strongly of the opinion that pharmaceutical literature would be more wel-

A LITTLE



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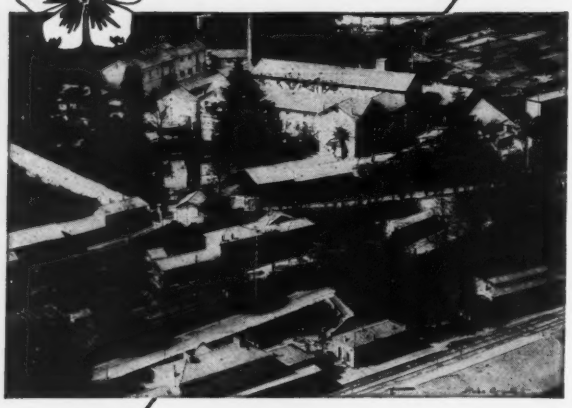

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Of course, teaching aids for patients are not an entire novelty to our industry and certainly not to insurance companies. But there are plenty of gaps, and needs are changing as new therapies are perfected.

One of our M.D.'s came up with a suggestion for a more personalized approach. This is how it would work. Dr. A. B. Chandler tells his patient, "We have an information service, and I am asking them to send you some background information on your condition. Read it over and, if you have any questions, we'll discuss them further." Dr. Chandler then checks a form and the requested material comes to the patient from Medical Information, Inc., a service of the ABC Laboratories, courtesy of Dr. A. B. Chandler.

This plan has the merit of flexibility. Material could be further personalized by means of a covering letter, typed from master tapes with brief fill-ins. Optional passages could be included or omitted, as the doctor specified.

Teaching aids would serve an important secondary purpose by interpreting the situation to the patient's family. Every doctor has had the sad experience of seeing a patient deteriorate after returning from a controlled hospital environment to a home where necessary procedures are not understood or appreciated. You have to teach the family and enlist their cooperation these days when geriatric problems loom so large, including the home care of long illnesses.

Millions of our senior citizens fail to realize their full potential for enjoying life. Sometimes they imagine themselves wholly disabled following surgery or serious illness. Facts, properly presented, would help them to overcome needless fears and to plan realistically for the future.

Quite a few of our doctors mentioned the need for information on resources available for helping patients with special problems, like the man who has suffered a stroke or the mother who has arthritis and six children. Often there are free or low-cost services of which neither the doctor nor the patient are aware. Information of this kind, assembled in cooperation with national health organizations and local social agencies, would make your detail man a welcome caller in many a doctor's office.

Management men are known to say, "That's a fine idea but will it sell drugs? After all, we have to compete with other houses." I am sure that the firm doing some of the things doctors really want is going to create a company image in their minds that will be pleasantly rewarding to all concerned.

"But we don't have enough money to promote our products and do this too," is another objection. We

say, "Don't do it in addition. Do it *instead*." There is nothing to keep you from reminding the profession effectively of your products while you are being helpful. After all, it's what they *read*, not what they throw away, that counts.

I've been asked, "Doesn't this approach concentrate on soft sell instead of hard sell?" My answer is this. I believe in *effective* sell. The philosophy of giving the doctor what he needs and wants will sell drugs more effectively. It will build good will in the profession and among the public. It will put the doctors on your side, so that, instead of frequently disparaging the price of medicines, they will prepare the patient by showing him how much cheaper they are than the long illness they may well prevent.

A. AND B. THERAPY

(*Continued from page 520*)

A and B milk is ingested daily.

(8) It has been suggested that, prior to major abdominal surgery, surgeons might try A and B cultures prophylactically in an effort to prevent or ameleoriate those terrible post-operative gas pains. Here is a field for further clinical research, where published results should be illuminating.

(9) Hyperchlorhidria (excess HCL secreted in the stomach), one of the predisposing causes of gastric and duodenal ulcers, appears to be reduced by A and B cultured milk therapy, according to some clinical findings.

(10) A and B cultured milk can be recommended along with bland, restricted diet, antacids and autonomic depressants in the management and therapy of ulcers in the G I tract.

(11) Further clinical observations may reveal that A and B therapy can be used alone in early ulcer management, along with the usual bland diets.

(12) It is noted bacteriologically that A and B therapy is only effective when ingested regularly. If the therapy is discontinued, the normal flora of coliproteus again gradually dominate the picture and symptoms recur.

(13) It is noted in rural Bulgaria and Roumania, where according to medical statistical data intestinal disorders are apparently rare or unknown, that A and B milk is ingested daily during the entire life of the family. These facts may have considerable bearing on the amazing longevity tendencies of these hardy rural people.

(14) Of interest to the cosmetic industry is the repeated clinical and cosmetological observation that buttermilk complexions, as opposed to pimples, acne vulgaris, and skin blemishes, generally result from prolonged A and B therapy. The physiological and enzymatic action of these two organisms in carbohydrate metabolism may bear on these findings.

(*Continued on page 538*)

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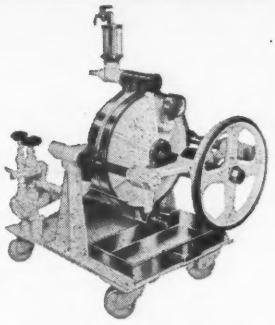

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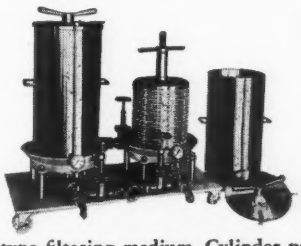

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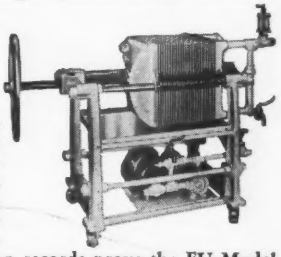

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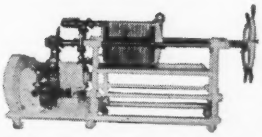

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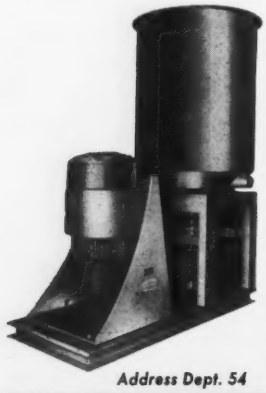

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(*Continued from page 537*)

Conclusion

Acidophilus and *bulgaricus* prophylaxis and therapy should be revived in the modern medical and pharmaceutical armamentarium of gastro-intestinal disorders and malfunction generally.

In view of the above data, further clinical and laboratory research should prove very rewarding and worthwhile, and should be undertaken in our pharmacy schools, medical schools, and by the manufacturers of biologicals.

As A and B therapy regains its former prestige, druggists might dispense these cultures as another valuable service to the public. However, in doing so, druggists need no longer use viable, living cultures as described above with daily transfers, for, since the advent of the lyophile process which involves complete dehydration and freezing of bacteria, vaccines, anti-sera, etc., organisms may be kept indefinitely. Just like dried yeast, *bulgaricus* and *acidophilus* can be kept in a state of suspended animation and stored in air-tight packages or capsules. To reactivate them, the powdered concentrate is merely poured into milk media, and incubated at room temperature for 24 hours, which produces a viable, active A and B milk culture ready for drinking.

Hynson, Wescott & Dunning of Baltimore already lyophilize A and B cultures for the drug market for immediate dispensing, and other pharmaceutical manufacturers are expected to follow suit, should there be a renewed demand for this fine biological product.

BIBLIOGRAPHY

Carter, C. R. Microbiology and Pathology, 1956. C. V. Mosby, St. Louis, Mo.: 208-212.
Barron, J. L. Philosophy and Future of Milk Control. 1944. Amer. Jr. Public Health Assn. 34: 467.
Bryan, A. H. and C. A. Bryan, Bacteriology, Principles and Practice, 1957. Barnes & Noble, N. Y.: 131-141; 97-99.
Swingle, O. B. General Bacteriology. 1947. Van Nostrand, N. Y.: 231-241.
Rettger, L. and N. Levy. Lactobacillus Acidophilus and Its Therapeutic Applications. 1935. Yale University Press, New Haven, Conn.
Eckles, C. H., W. B. Combs and H. Macy Milk and Milk Food Products. 1951. McGraw Hill, N. Y.
Hammer, B. W. Dairy Bacteriology. 1948. John Wiley & Sons.
Wadsworth, A. B. Standard Methods. 1947. Williams & Wilkins Co., Baltimore: 257-258.

FERMENTATIONS

(*Continued from page 439*)

discussing general production problems, estimated world-wide production in 1956 in excess of 1000 tons.

Research on production and chemotherapeutic properties of antibiotics is world-wide. The Second All-Union Conference on Antibiotics at the University of Moscow, May 31 to June 7, 1957, comprised 252 papers covering searches for new compounds, chemistry and biochemistry, and clinical observation.

The antibiotics discussed seem to be the same (with different nomenclature) known in other parts of the world. Albomycin is probably identical with grisien. Levomycin is chloramphenicol and biomycin

is chlortetracycline.

Without citing an extensive bibliography, considerable progress is being made in the whole field of the biogenesis of biochemical products, including several antibiotics. A review by Birch is an excellent compendium of current facts.

A new role for the fermentation industry may evolve from expanded cancer research programs. Financial support from the Cancer Chemotherapy National Service Center, National Institutes of Health, has been extended to academic, private, and industrial research laboratories to encourage more research. Included in this effort will be metabolic products of microorganisms. Industrial laboratories participating in this program include Chas. Pfizer & Co., Inc., Battelle Memorial Institute, Bristol Laboratories, Parke-Davis, American Cyanamid, Eli Lilly, Abbott Laboratories, and the Upjohn Co. Extensive research on microbial products and cancer is conducted by the National Institute of Health, Japan. Gause has recently described some preliminary work suggesting that microbial mutants may serve *in vitro* as screening agents in place of neoplasms *in vivo*.

Current information on new antibiotic compounds is shown in TABLE 2.

Penicillin. Ganapathi has presented a mechanism for the biogenesis of penicillin in which the immediate precursors are L-cysteine, dimethylpyruvic or dihydroxyisovaleric acids, ammonia or amino acids, and phenyl acetate. The union of precursors to form benzylpenicillin is accomplished through three peptides and oxidative cyclization.

Replacing lactose in experimental media, Demain found L-lysine completely inhibited penicillin formation. With the exception of L-arginine and L-hydroxyproline, yields with other amino acids were intermediate between endogenous and the cystine-valine mixture—L-hydroxyproline was as effective as cystine-valine; L-arginine was 26 per cent better. It enhanced yields from the cystine-valine mixture but did not reverse inibition caused by lysine.

Interesting tracer work continues to be reported from Arnstein's group in London concerning penicillin biosynthesis. Using tritium-labeled cystines, DL-α-^3H-cystine or DL-β-^3H-cystine-labeled penicillins were obtained, showing that the hydrogens on the α and β carbons (and presumably these carbon atoms) were retained during biosynthesis. Although L-valine is a precursor of the penicillamine moiety, D-valine is not.

Streptomycin. Ferguson and others have published details of their work with near synthetic media in which streptomycin biosynthesis was greatly enhanced by 5,5-dialkylbarbituric acids, principally the dimethyl- and ethyl-isopropyl derivatives. Available evidence did not suggest that these functioned as precursors.

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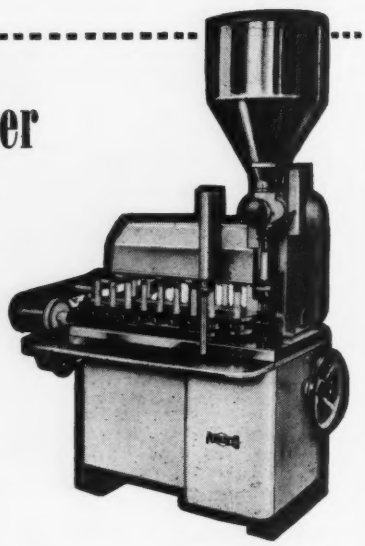

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dominantly of the polyene type. The close relationships between the many polyenes makes identification difficult particularly within the specific polyene classes (tetraene, pentaene, etc.). Koe and others have suggested that these major groups should be further subdivided into compounds of acidic, basic, and amphoteric nature. Ball and others found polyenes commonly produced by soil *antinomycetes;* one strain contained a tetraene, pentaene, and heptaene.

Brown and Hazen have reviewed the present status of nystatin and its utility in chemotherapy. The amphotericins are also receiving clinical evaluation.

That antibiotics are of interest to members of the chemical industry not usually considered with the fermentation houses is indicated by the assignment of a patent to Du Pont for an antibiotic. Another nonpolyene antifungal, a *Streptomyces* product, has been reported from the Montecatini laboratories.

Erythromycin. The structural specificity of antibiotics is again emphasized by chemical modifications of erythromycin. Des-*N*-methylerythromycin has been known as a low-activity derivative. Clark and Freifelder have replaced the missing methyl group with ethyl-, propyl-, *n*-butyl-, isobutyl, and γ-phenylpropyl- radicals. The ethyl-nor-erythromycin, the most active in the series, was only one fifth as active as the natural dimethylamine-containing compound.

Oleandomycin. Several modifications of oleandomycin have been made without destroying its antibiotic effectiveness. These include a chloroform solvate, a chlorohydrin involving chlorination of an epoxy functional group, and a series of acetyl derivatives. Three hydroxyl groups may be reacted to triacetyloleandomycin. All of the theoretically possible mono- and diacetylated oleandomycins have been prepared. Triacetyloleandomycin possesses many desirable properties, including lack of a bitter taste. Though less active in the usual microbiological assays, it produces unusually high blood and urine levels after oral administration.

Tetracyclines. The high interest in tetracycline as a direct fermentation product is attested by several fermentation patents. High yields with small amounts of the chlortetracycline are obtained by using dechlorinated media (usually silver nitrate-treated cornsteep liquor). One patent application calls for use of certain chlorination inhibitors such as 2-(2-furyl)-5-mercapto-1,3,4-oxadiazole.

Also of interest are two new members of the family. The American Cyanamid Co. group has produced 6-demethyl-chlortetracycline by fermentation with an *S. aureofaciens* mutant. Catalytic hydogenation yielded 6-demethyltetracycline. Both are reported to be more stable than the other natural forms in acid and basic solutions.

Dosage formulations have been extensively studied. Last year the phosphate complex (Tetrex, Bristol) of tetracycline was claimed to give enhanced blood levels; later a sodium metaphosphate mixture (Ach-

romycin V, Lederle) was introduced. Early in 1958 a new formulation, containing glucosamine and tetracycline (Cosa-Tetracyn, Pfizer) was introduced. This product is claimed to induce maximum blood levels more rapidly and higher than previous formulations. The glucosamine adjunct will also be used with oxytetracycline (Terramycin) products.

Industrial production of tetracycline by hydrogenation of chlortetracycline is described by Forbath.

Miscellaneous Antibiotics. Hygromycin has been approved by the Food and Drug Administration for use in hog feed for worm control. Feeds should contain about 5 pounds per ton. Kannamycin is being produced by Bristol Laboratories for clinical evaluation under license from the Japanese discoveries. Prime interest is its use in tuberculosis chemotherapy, but it may find other advantages as its antibacterial spectrum is similar to that of streptomycin. Abbott Laboratories is offering resistocetin (Spontin) for use in serious infections resistant to other antibiotics. It requires intravenous administration at present; derivatives for oral and intramuscular administration are being sought. Gross and Katz have observed that media and environmental conditions can alter composition of the antinomycin complex.

Structure Studies. Structure studies on some of the newer antibiotics continue to add to the fund of knowledge on these complex agents. Additional data are reported on the *epi*-tretracyclines. Nucleocidin is described as glucoside of adenine with sulfamic acid bound to the carbohydrate moiety as an ester. The structure of antibiotic T-1384 (Netropsin) is complete. Structures for novobiocin neomethycin, and etamycin were reported. Synthesis of cycloserine and a methyl analog were published in detail.

Steroids

A review of microbiological steroid transformations with a description of commercial applications has been prepared by Vischer and Wettstein.

Research in the year has resulted in oxygenation of three new positions on the steroid nucleus—1α and 2β, which were reported simultaneously and 12β.

Perlman and others presented evidence that steroid oxidation systems in two *Streptomyces* are adaptive in origin. Formation of the enzymes can be prevented by the antibiotics streptomycin, viomycin, dihydrostreptomycin, neomycin, and tetracycline.

Examination of the metabolism of progesterone by *Cylindrocarpon radicola and Streptomyces lavendulae* revealed two common intermediates (1,4-androstadiene-17β-ol-3-one and 1,4-androstadiene-3,17-dione). Furthermore, 1-dehydroprogesterone may precede both compounds. *C. radicola* further metabolizes the dione to 1-dehydrotestolactone which could not be found among the *Streptomyces* products. *Fusarium javanicum* produces 1-dehydro-testolactone and 11α-hydroxy-1-dehydrotestolactone from progesterone.

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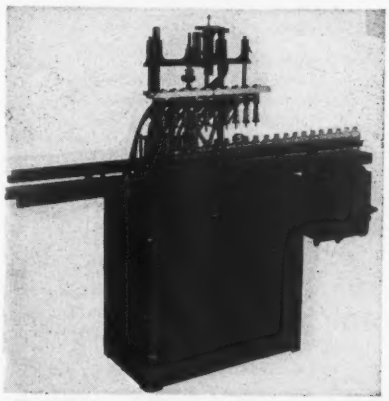

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TABLE 3. Microbiological Transformation of Steroids

Transformation	Substrate	Product	Organism
Hydrogenation	4,6-Pregnadiene-17a,21-diol-3,11,20-trione	4,6-Pregnadiene-17α,20β, 21-triol-3,11-dione	*Curvularia lunata*
2β-Hydroxylation	4-Pregnane-17α,21-diol-3,20 dione (compound S)	4-Pregnane-2β,17α,21-triol-3,20 dione	*Rhizoctonia ferrugena*
	4-Androstene-3,17-dione	2β-Hydroxy-4-androstene 3,17-dione	*Penicillium* sp. and *Streptomyces* sp.
1e-Hydroxylation	Compound S	4-Pregnane-1e,17α,21-triol-3,20-dione	*R. ferrugena*
1α-Hydroxylation	4-Androstene 3,17-dione	1α-Hydroxy-4-androstene-3,17-dione	*Penicillium* sp.
	Dehydroepiandrostene	1α-Hydroxy-4-androstene-3,17-dione and 1α-hydroxy-dehydroepiandrostene	*Penicillium* sp.
1,2-Dehydrogenation	Hydrocortisone	Prednisolone (Δ^{21}-pregnadiene-11β,-11β,17α,21-triol-3,20-dione)	*Streptomyces lavendulae*
	16α-Hydroxy-9α-fluorohydro-cortisone	16α-Hydroxy-9α-fluoropredisolone	*Mycobacterium rhodochrons*
	3-Keto-Δ^4 steroids (hydrocortisone)	$\Delta^{1,4}$ Steroids (predisolone)	*Nocardin* sp.
			M. smegmatis
			B. cyclooxydons
	11α-Hydroxyprogesterone	$\Delta^{1,4}$-Pregnadiene-11α-ol-3,20 dione and $\Delta^{1,4}$-pregnadiene-11α,20β-diol-3-one	*B. cyclooxydons*
	Compound S (pregnene-17α,21-diol-3,20-dione)	$\Delta^{1,4}$-Pregnadiene-17α,21-diol-3,20-dione	*B. cyclooxydons*
	Cortisone	$\Delta^{1,4}$-Pregnadiene-17α,21-diol-3,11,20-trione	*B. cyclooxydons*
	9α-fluorohydrocortisone	9α-fluoro $\Delta^{1,4}$ pregnadiene-11β,17α,21-triol-3,20-dione	*B. cyclooxydons*
11α-Hydroxylation	Progesterone	11α-Hydroxy progesterone (Δ^4-pregnene-11α-ol-3,20-dione)	*Bacillus cereus*
			Cunninghamella echinulata
	17α-Hydroxyprogesterone	Δ^4-Pregnene-11α,17α-diol-3,20-dione	*C. echinulata*
	Δ^4-Pregnene-17α,21-diol-3,20-dione	Δ^4-Pregnene-11α,17α,21-triol-3,20-dione	*C. echinulata*
	Progesterone	11α-Hydroxy-progesterone	*Aspergillus ochraceus*
		6,11α-Dihydroxy progesterone	*A. ochraceus*
	17α-Hydroxy-11-hydroxy-corticosterone	Epi Compound F (Δ^4-pregnene-11α,17α,21-triol-3,20-dione)	*A. ochraceus*
	Desoxycorticosterone	Δ^4-Pregnene-11α,21-diol-3,20-dione	*A. ochraceus*
	Δ^4-Pregnene-17α-ol-3,20-dione	Δ^4-Pregnene-11α,17α-diol-3,20-dione	*A. ochraceus*
	3-Ketocholanic acid	11α-Hydroxy-3 ketocholanic acid	*A. ochraceus*
11β-Hydroxylation	Compound S	Hydrocortisone	*Botrytis cinera* (*Sclerotina fuckeliana*)
			Dothichiza sp.
			Trichothecium roseum
			Colleotricheum pisi
			Colleotricheum phonoides
			Coniothyrium helliborine
	17α-Hydroxydesoxycorticosterone	Hydrocortisone; epihydrocortisone	*Cortricum sasoki*,
			C. microscleratia,
			C. praticola
12β-Hydroxylation	Progesterone	4-Pregnene-12β,15β-diol-3,20-dione	*Calonectria decora*
	4-Prognene-11α-ol-3,20-dione	4-Pregnene-11α,15β-diol-3,20-dione	*C. decora*
15α-Hydroxylation	Progesterone (4-Pregnene-3,20-dione)	4-Pregnene-15α-ol-3,20-dione and 4-Pregnene-11α,15α-diol-3,20-dione	*Nigrospora oryzae*, ATCC 8667
	4-Pregnene-21-acetoxy-3,20-dione	4-Pregnene-15α,21-diol-3,20-dione	ATCC 12771
15β-Hydroxylation	4-Pregnene-17α-ol-3,20-dione	4-Pregnene-15β-17α-diol-3,20-dione	*Nigrospora oryzae*
15β-Hydroxylation	Progesterone	15β-Hydroxyyprogesterone	*B. cereus*
16α-Hydroxylation	9α-Fluorohydrocortisone	16α-Hydroxy-9α-fluorohydrocortisone	*Streptomyces roseochromogenous*
	9α-Fluoroprednisolone	16α-Hydroxy-9α-fluoroprednisolone	*S. roseochromogenous*
17α-Hydroxylation	4-Pregnene-3,20-dione	4-Pregnene-17α-ol-3,20-dione	*Sporomia minima*
	4-Pregnene-21-diol-3,20-dione	4-Pregnene-17α,21-diol-3,20-dione	*S. minima*
	4-Pregnene-11β,21-diol-3,20-dione	4-Pregnene-11β,17α,21-triol-3,20-dione	*S. minima*
	4-Pregnene-11β-ol-3,20-dione	4-Pregnene-11β,17α-diol-3,20-dione	*S. minima*
21-Hydroxylation	Progesterone (4-Pregnene-3,20-3,20-dione)	Desoxycorticosterone (4-pregnene-21-ol-3,20-dione)	*A. niger*
	11α-Hydroxyprogesterone	Epicorticosterone (4-pregnene-11α,21-diol-3,20-dione)	*A. niger*
	11β-Hydroxyprogesterone	Corticosterone (4-pregnene-11β,21-diol-3,20-dione)	*A. niger*
	11-Ketoprogesterone (4-prognene-3,11,20-trione)	11-Dehydrocorticosterone (4-pregnene-21-ol-3,11,20-trione)	*A. niger*
	17α-Hydroxyprogesterone	Reichstein's Substance S (4-pregnene-17α,21-diol-3,20-dione)	*A. niger*
	6β-Hydroxyprogesterone	6β-Hydroxydesoxycorticosterone (4-pregnene-6β,21-diol-3,20-dione)	*A. niger*
	Nor-progesterone	*Nor*-desoxycorticosterone (4-19-*Nor*-pregnene-21-ol-3,20-dione)	*A. niger*
21-Thiolesters to 21-Thiols	1,4-pregnadiene-17α-ol-21-thiol-π3,11,20-trione-21-acetate (or proprionate)	1,4-Pregnadiene-17α-ol-al-thiol-3,11,20-trione	*Flavobacterium dehydrogenans var. hydrolyticum*
	1,4-Pregnadiene-11β,17α-diol-21-thiol-3,20-dione-acetate (or proprionate)	1,4-Pregnadiene-11β,17α-diol-21-thiol-3,20-dione	*Flavobacterium dehydrogenans var. hydrolyticum*
	9α-Fluoro-1,4-pregnadiene-11β,17α-diol-21-thiol-3,20-dione-acetate	9α-Fluoro-1,4-pregnadiene-11β,17α-diol-31-thiol-3,20-dione	*Flavobacterium dehydrogenans var. hydrolyticum*
	9α-Fluoro-1,4-pregnadiene-17α-ol-21-thiol-3,11,20-trione-21-propionate	9α-Fluoro-17α-ol-21-thiol-3,11,20-trione	*Flavobacterium dehydrogenans var. hydrolyticum*
Miscellaneous	Compound S	Cortisol, cortisone, 11-epi-cortisol	*Rhizoctonia* sp.
3β, 17β Groups Oxido-reduction		OH groups formed at pH 5.5; and/or keto groups at pH 9	*Pseudomonas testosteronia* n.sp. (enzyme extract plus DPN)

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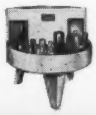

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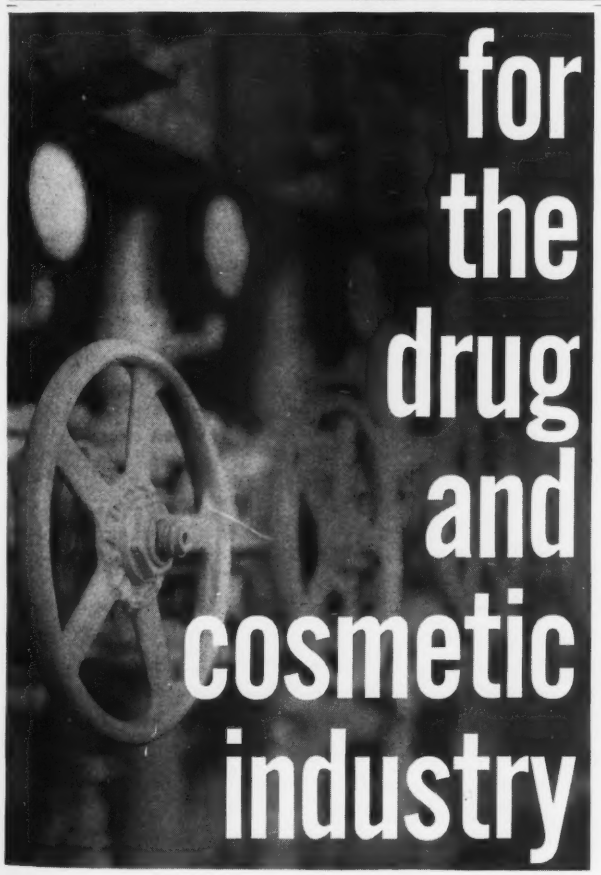

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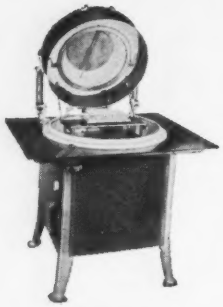

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Nigrospora oryzae strains accomplish 15α (and some 11α, 15α) hydroxylations of progesterone. Possibly 15β-hydroxylation of 17α hydroxyprogesterone is also accomplished (a printing error may account for the 15β hydroxylation). If so, this may be the first observation of a change in stereospecification of hydroxylation induced by ring substitution. A diketopiperazone is also produced by *Nigrospora*. (Other transformations are listed in TABLE 3, page 542.)

Fermentation as a Unit Process

Microorganisms. The development of microbial genetics in the past 10 years makes it possible to add a whole battery of new techniques to the improvement of industrial strains. These techniques are based on genetic recombination (the association and reassortment in one strain of hereditary factors from two or more different strains). This breeding technique requires basic knowledge and know-how and is limited to specialized groups in a few laboratories. An excellent review by Pontecorvo discussed the genetical techniques in industrial microbiology.

A new penicillin strain known as New Hybrid was investigated by Klenner and Ioffo; under suitable conditions it was able to produce yields in excess of 4000 units per ml. of penicillin.

Maintenance of Strain. Maintenance of industrially used strains capable of producing high yields of product is of primary importance to fermentation plants. Methods such as slants, soil storage, lyophilization, spray drying, storage under oil, and refrigeration are widely used, and the type of storage is usually dependent on such characteristics as viability, stability, potency, and ease of handling for plant use.

The effect of lyophilization as a conservation method for microorganisms which retain their biochemical properties was studied by Januszewicz who lyophilized 13 strains of *A. niger*. All could be revived, and the culture retained its characteristic growth properties. Temperature of storage was found important for stability, although temperature did not influence acid-forming abilities. Lyophilized cultures of *A. niger* which had been kept 5 years retained their entire ability for formation of citric acid.

The influence of drying conditions on survival of *Serratia marcescens* was studied by Splittstoesser and Foster.

Studies in the recovery of viable cells of freeze-dried *Serratia marcescens* were made by Wasserman and Hopkins. They found that recovery was greater if some salt solution were substituted for water as a rehydrating medium. However, the effectiveness of the salt solutions depended on unknown conditions within the cells developed during growth of the freeze-drying process. Maximum recovery of viable cells was obtained in 0.05*M* malate at a pH of 6.0 and a temperature of 30° C.

Media. The effect of medium constituents on penicillin production from natural materials was studied by Bhuyan and Johnson. The utilization of various organic materials as nitrogenous nutrients in penicillin production by several strains of *P. chrysogenum* was investigated. Peptone and tryptone were unable to supply the essential elements required by the mold, and a salt mixture was added to prepare a complete medium with these nutrients. Glucose was necessary when media containing yeast extract or fish solubles were used. Lactose at a 5 per cent level was sufficient to meet the needs of the mycelium during the penicillin production phase. Optimum concentration of the nitrogenous nutrient was determined in a medium containing 5 per cent lactose. Steep liquor, cottonseed meal, soybean meal, and distillery solubles were the best organic nutrients studied.

An interesting patent dealing with neomycin, issued to Johnson and others, shows what can be done by use of media modification to improve yields vastly. Yields were as high as 8775 units per ml. in some cases, with averages in excess of 5000 units per ml. Prior published yields on the neomycin fermentation using the same culture *S. fradiae* 3535X (Waksman) ordinarily show potencies in the 800 to 1000 units per ml. range.

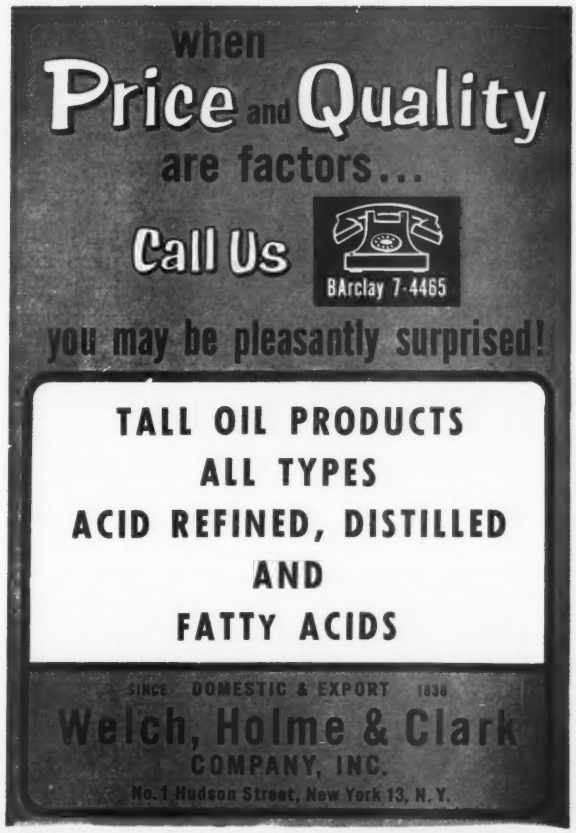
Another patent, issued to Ziffer, shows the advantage of a certain combination of ingredients in the fermentation medium to furnish high yields of bacitracin. In this case the presence of ammonium sulfate and a source of assimilable nitrogen in the medium result in yields of 200 or 300 units per ml. of bacitracin.

Another study was that of Bonomi, who thoroughly reviewed the microbial metabolism of carbohydrates.

Trace Materials. The importance of trace elements or micronutrients in fermentation media continues to be stressed. The metabolic role of trace elements in plants, animals, and microorganisms was the subject of a conference held at Wooster, Ohio, in October 1957 on the occasion of the 75th anniversary celebration of the Ohio Agricultural Experiment Station. Studies were described by 14 of the world's leading authorities on trace elements.

The role of metal ions in yeast fermentation was reviewed by Nason. He discussed the role of manganese, zinc, magnesium, iron, copper, and cobalt in biochemical changes involved in the growth of yeast cells. The effects of trace elements on *Streptomyces* was studied by Heim.

The role of metallic and nonessential elements in fungi was reported by Lilly. The metallic elements considered to be essential to fungi may be grouped as follows: elements which appear to be essential for all fungi (iron, zinc, manganese, copper, molybdenum, potassium, and magnesium); elements which are essential for some fungi and not for



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others (calcium); and elements which are apparently essential for some fungi under some conditions (scandium, vanadium, gallium). The difficulties of formulating a satisfactory concept of essential elements, the influence of other medium constituents upon metallic ions required, and the competition among ions were also discussed.

Several patents have been issued covering the addition of small amounts of particular ingredients. The addition of 1 per cent methylene blue to the culture medium resulted in improved penicillin yields, according to Takida and Tawara. Small amounts of dyes apparently stimulate fermentation production of many antibiotics and solvents. Another patent of interest claims improved streptomycin potencies from the addition of 0.0 to 0.5 per cent nucleic acid to the culture medium.

Sterilization and Aseptic Techniques. Radiation sterilization of fermentation media using radiation from cobalt-60 was investigated by Gillies and Kempe. Increases of 40 to 73 per cent in fermentation rate and no change in the yield were found when malt sprouts were sterilized by irradiation rather than heat. Gamma radiation may be of value in situations where heat causes no undue damage to the media constituents or in fermentations that cannot currently be conducted under aseptic conditions. The rate of product formation in some biological processes may be increased by the use of irradiation for sterilization.

A patent issued to Cash and Hatch claims improved fermentation yields by use of a new medium sterilization process. Their process comprises sterilizing the medium in a stream before inoculation by raising its temperature in less than 10 seconds to between 270° and 290° F., maintaining the medium for from 3 to 6 seconds at 270° to 290° F., and finally cooling the medium in less than 10 seconds to below 200° F.

Fermentation Equipment. Five-liter stainless steel fermentors were described by Roxburgh and others. While these fermentors do not differ in principle from some of those previously described, they have certain advantages of simplicity of construction and extreme ruggedness. They also give dependable and reproducible results. Yields of ustilagic acid from *Ustilago zeae* fermentations show good performance in these fermentors.

Another contribution by Nilsson describes 10-liter fermentors, including the actual design layout and operation. A complete operational description is given, as is a general review of aeration, pH control, antifoam system, and sampling.

Fermentation Process. The continuous fermentation process continues to receive attention. A rather complete annotated bibliography on all continuous fermentation processes to date was made by Whalley. This should be of interest to all those engaged in the field.

A recent patent by Geiger and Compton concerned the application of continuous fermentation to brewer's wort for the first time. They claim a rapid fermentation, more efficient use of substrate, less hold-up time all around, and better control.

A 2-liter, continuous culture apparatus for microorganisms was described by Elsworth and others. Aeration is achieved by means of a mechanical stirrer and injected air. Automatic temperature and pH control are features of the apparatus which can be operated continuously with freedom from contamination for more than 1000 hours.

Aeration in industrial fermentation continues to be of importance, as most of the present-day fermentations are aerobic. Oxygen transfer in submerged fermentation of *Penicillium chrysogenum* in industrial fermentors was studied by Gondhalekar and Phadke. The variation of specific oxygen diffusion rate in industrial fermentations was measured by estimating polarographically the concentration of dissolved oxygen in the broth fluid and the specific oxygen uptake rate of the mycellium. Penicillin titers in batches with higher mycellium content and higher values of specific oxygen diffusion rates were found to be higher.

In another study of oxygen absorption rates in laboratory and pilot plant equipment, Corman and associates presented an improved procedure. They also found that antifoam agents markedly depress oxygen adsorption by liquids; therefore, to maintain highly aerobic conditions during a fermentation, a minimum amount of antifoam should be added.

Other studies on oxygen transfer have been made by Philips and Johnson and by Pirt and associates. Studies on aeration and cultivation of microorganisms have been made by Heden and by Dietrich. The evaluation of a shaken flask as a fermentation reactor was studied by Gaden and Rhodes, who found that scale-up directly from a shaken flask using available parameters does not seem valid, and the use of a small scale stirred reactor was therefore recommended.

A patent on aeration and agitation of fermenting liquids without the use of antifoaming agents was described by Chain and Paladino. Agitation by means of a rotary device produces an oscillating vortex which distributes the air in the amounts required for fermentation, and not in excess, and kills the foam. The application applies chiefly to antibiotic fermentations.

Automatic *p*H control in fermentation is obtaining more and more interest as it frequently influences the ultimate yield of product. At the 132nd ACS meeting in New York, an entire symposium was devoted to *p*H control in fermentation.

Another problem of concern in most aerated and agitated fermentations is that of foaming. An electronic foam controller for fermentors was described in detail by Pfeifer and Heger. A patent by Hlavcek

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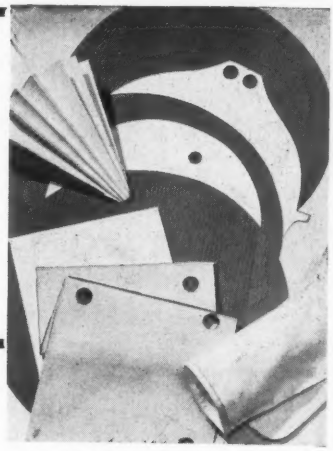

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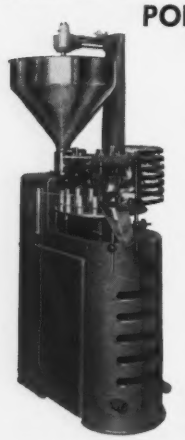

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on a new defoaming composition uses sugar cane oil as its basic ingredient. Various other compositions are described.

Another serious problem encountered by fermentation producers is that of leaks in equipment such as jackets or cooling coils. Winter and associates have described results of their studies on finding these small leaks. They tried radioactive tracers, fluorescent dyes and ultraviolet light, fixed dyes, several sensitive chemical reactions, halide torch, halide leak detector, and helium mass spectrometer. Their best solution was to pressurize the jacket with ammonia, then brush a special bromocresol purple solution over the inside wall. Wherever ammonia could pass through the wall, the indicator changed from yellow to purple.

An interesting review on control of heat generated in fermentation was presented by Mumford.

Contamination, as always, continues to pose problems to fermentation producers. An interesting patent to Carvajal deals with the production of streptomycin by a culture immune to phage. The medium used was a synthetic one whose composition is more readily controlled than a natural one. Yields of streptomycin were more consistent, and better *p*H control was effected during fermentation. Yields as high as 3000 γ per ml. were obtained in 96 to 100 hours. Actino phages, antibiotics, bacteriolysins, and bacteriolytic agents were reviewed by Welsh.

METI-DERM AEROSOL

(*Continued from page 522*)

and professional sales representatives.

Enthusiasm for the new promotional kit ran high and advance reports on its use were soon being prepared and sent to the field.

Tempo Quickens

The promotional tempo was stepped up as the product's introductory date—July 1—approached. An avalanche of mailings began; dealer aid cards, direct retail kits, informative product brochures, sales letters, catalogue sheets and price lists went off to the trade; Meti-Derm aerosol samples, the flip charts and copies of trade and promotional literature flowed out from the mail room to the company's detailmen. Public Relations and Professional and Trade Relations added to the campaign with publicity and personal contacts.

Reports from the field indicate that the aerosol has been well received by physicians and the others who have been detailed.

hydrocarbon propellent can, and do, play an important role in pharmaceutical aerosols. Certain inhalation products, as previously mentioned, are now marketed with these valves. It is possible that, if these valves were not available, these units could not be sold due to the uncontrolled administration of potent drugs.

In topical preparations, metered valves permit an accurate dose to be administered over a given area—an accomplishment not before possible. In certain instances, a physician will hesitate to prescribe a drug because of its potency or expense. Waste is encountered with ointments, creams and lotions in bottles or tin tubes, and dosage can be limited only within broad limits, as shown by the labels on such products which suggest "apply sparingly." Further, the patient is distressed when an expensive product has to be reordered, particularly when much of the initial purchase was left upon the applicator and thrown away, or was washed off the fingers and down the drain.

Many pharmaceutical ingredients are adversely affected by trace metal contamination. To minimize this problem, any valve used for a pharmaceutical product should have all of its metal parts coated with an innocuous material. In certain formulations, Epon linings have proved quite satisfactory, but this has not been the case in other formulations.

Containers

The problem of obtaining satisfactory valve linings is magnified many times when metal containers are used since these too must be coated. Our experiments have clearly shown that there is no "universal lining." For example, although an Epon lining may be suitable for a specific formulation, it cannot be used with a different type of product. Similarly, vinyl or phenolic coatings, or combinations of epon, vinyl and phenolic coatings, may be superior for a given product. Experimentation is the only method of determining the most suitable can lining for a formulation, and each preparation must be handled separately. For example, we formulated an aqueous product having a pH between 1 and 2. It was placed in a lacquer-lined, tin plated can with a double enameled side seam in one case, and a triple enameled side seam in another case. After one month's storage at 45°C., the concentrate had eaten through the lining and the can wall in a majority of the cases. Similar results were noted with a multivitamin-mineral product having a pH of 4.2, which employed an Epon lined aluminum can.

Another problem with lined cans is the high probability of "pin holes" through the lining. This, of course, is another source of metal contamination. With stainless steel containers now available in certain sizes, metal contamination is minimized. How-

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ever, these containers are too expensive for many manufacturers.

If glass containers are used, an internal coating is not needed. Glass has been used to hold pharmaceuticals probably since the first such products were marketed. Except in rare cases, glass has no effect upon the stability of medicinals. Only in such products as specialized injectables, where the alkali content of the glass has been leached into solution and has affected certain of the active ingredients, is a glass container questionable. Special grades of glass are available, however, to overcome even this problem. In aerosols, the need for external coatings with higher pressure glass packages prevents light contamination if an opaque or colored plastic is used.

To the best of my knowledge, plastic containers per se have not been evaluated for pharmaceutical aerosols. Though this may offer promise for the future, the only convenient choice a manufacturer presently has is glass or metal containers. From my previous statements, glass appears to be the container of choice, but one must also consider that cans are less expensive. If a metal container is satisfactory for a given product (and we have observed many such instances), the manufacturer can use cans. From the standpoint of package design, even though glass is available in a greater variety of shapes, I believe that a can can be made as appealing as glass. And, of course, with a can higher pressures can be safely used without the risk of flying glass from an explosion either in the laboratory or in the home.

Areas for Investigation

There are still certain problems in pharmaceutical aerosol technology to be overcome. I suggest that these areas be investigated:

1. A more-or-less "universal" can lining is needed which will be completely innocuous and can be applied without leaving "pin holes." Perhaps a member of the silicone family will be satisfactory if the economics and technology permit. This approach has proven quite satisfactory with injectable vials.

2. A more versatile line of delivery spouts is necessary to allow for the administration of throat sprays, of oral products directly without a spoon or dropper, of nasal sprays, of ear and eye drops, of vaginal and rectal creams, and, perhaps of injectables. Mention of injectables may seem odd, but investigators are now attempting to administer medicinals in solution subcutaneously through the pores of the skin by pressure and thus eliminate hypodermic needles. Aerosols would certainly supply the pressure and, perhaps, the idea is not so far-fetched as it sounds initially.

3. A nontoxic propellent of the halogenated hydrocarbon class could be used for topical applications to mucosol membranes.

4. A nontoxic propellent of the halogenated hydrocarbon class which will not emulsify or otherwise

combine with aqueous or other liquid concentrates, would be valuable. Products could be dispensed in a nonaerated form and yet maintain a liquid propellent reservoir so that the pressure of the package remains constant throughout its use. If this is not possible, then some system must be devised to maintain a constant pressure in Nitrosols.

5. Many liquid pharmaceuticals are administered in 5 cc. doses. Because of this, there is a need for glass containers which can hold twelve or more ounces at 90 or greater psig. If the glass companies hope to remain competitive in this area, larger containers than those currently available are needed.

Outlook for the Future

The future for pharmaceutical aerosols holds a great deal of promise not only for the consumer, but also for the pharmacist and the pharmaceutical manufacturer. For instance, certain pharmacies now wish to prepare their own aerosol products, so they can compound specific prescriptions utilizing this relatively new method of packaging.

Many bulk liquid products are currently supplied to the druggist in glass containers. He, in turn, has to subdivide the product into smaller containers for each prescription he fills. Not only is this procedure time consuming, messy and often wasteful, but instability of the active ingredients may be encountered because of the product's continual contact with air. It probably won't be too long before these bulk shipments to the druggist will also be pressure-packed.

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Penta[illegible]enzoylf[illegible]omo[illegible]enta
chlo[illegible]enzald[illegible]and[illegible]Pent
dec[illegible] Acid, Pentadecylic A[illegible]eryt
to[illegible], Pentaerythritol Mo[illegible]rin,

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